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VEHICLE TESTING TO DETERMINE FEASIBILITY OF EMISSION INSPECTION AT ALTITUDE

AUTOMOTIVE TESTING LABORATORIES,
INCORPORATED

PREPARED FOR
ENVIRONMENTAL PROTECTION AGENCY

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VEHICLE TESTING
TO
DETERMINE FEASIBILITY
OF
EMISSION INSPECTION AT ALTITUDE

Automotive Testing Laboratories, Inc.
19900 East Colfax Ave.
Aurora, Colorado, 80011

for the

Environmental Protection Agency

Contract 68-01-0439

September, 1972

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A laboratory study was conducted on 1968 - 1972 model vehicles at altitude to evaluate vehicle emission reduction concepts investigated and applied at lower elevations. Since vehicle exhaust hydrocarbons and carbon monoxide emissions are intrinsically high at higher elevations, it was suspected that emission reducing strategies might not prove significantly beneficial at higher elevations. Furthermore, emission reduction factors by engine maintenance are not defined.

The study quantitatively defined hydrocarbon, nitrogen oxides, and carbon monoxide emission reduction. Direct maintenance cost was determined. Key mode and idle emission inspection concepts are discussed.

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EPA Review Notice

This report has been reviewed by the Environmental Protection Agency and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

ABSTRACT

A laboratory study was conducted on 1968 through 1972 model vehicles at altitude to evaluate vehicle emission reduction concepts investigated and applied at lower elevations. Since vehicle exhaust hydrocarbons and carbon monoxide emissions are intrinsically high at higher elevations, it was suspected that emission reducing strategies might not prove significantly beneficial at higher elevations. Furthermore, emission reduction factors by engine maintenance are not defined.

The study quantitatively defined hydrocarbon and carbon monoxide emission reduction at about 15% and 10% respectively. Oxides of nitrogen emissions remained unchanged. Direct maintenance cost to achieve this reduction is about $12.00 per car.

Key mode and idle emission inspection concepts both proved to be beneficial in achieving emission reductions. However, experimental results indicate that greater correlation exists between key mode inspection and the 1975 Federal exhaust emission test procedures. Based on these correlations, the assumption that key mode is more able to define high emissions was tested and confirmed. Although the key mode - Federal test correlation is greater, emission inspection by idle testing was found to be the more cost effective inspection concept.

This report was submitted in fulfillment of Contract 68-01-0439 under the sponsorship of the Environmental Protection Agency.

CONTENTS

Section		Page
I	Conclusions	1
II	Recommendations	3
III	Introduction	5
IV	Experimental Design	11
V	Test Program Description	15
VI	Test Results and Data Analysis	31
VII	Acknowledgements	49
VIII	References	51
IX	Glossary	53
X	Appendices	55

Preceding page blank

FIGURES

Number		Page
1	Computer Plot of Attrition Curve	18
2	Flow Chart of Registration Data Development	20
3	Exhaust Emission Data Reported from 1975 FTP and Key Mode Operation	25
4	Engine Diagnostic Analysis Report	26
5	Vehicle Test and Maintenance Flow Chart	28
6	Distribution of Test Sample by Make and Model Year	32
7	1975 FTP Hydrocarbon and Carbon Monoxide Emissions Determined by HC and CO Rejection Rates	44

Preceding page blank

TABLES

Number		Page
1	Distribution of Passenger Cars by Model Year in Colorado as of July, 1972	21
2	Distribution of 75 Vehicle Sample, by Make and Model Year	22
3	Key Mode Operation	23
4	Maintenance Status of 75 Vehicle Sample as Received	34
5	Distribution of Maintenance Costs - 75 Vehicles	35
6	75 Car Sample Emission Data Before and After Maintenance	36
7	Analysis of 1975 FTP Emission Data	37
8	1975 FTP, and CKMC and IC Correlation	39
9	Relative Ranking of Highest HC Emitting Vehicles	40
10	Relative Ranking of Highest CO Emitting Vehicles	41
11	Mean 1975 FTP Emission Levels at 20, 30, and 40% Registration Rates for CKMC, IC and 1975 FTP	43
12	Cost Effectiveness by Rejection Rates	45
13	Cost Effectiveness Comparison of IC and CKMC Inspection and Rejection	47

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SECTION I

CONCLUSIONS

1. At a nominal cost limitation of $25.00 per car, the mean direct cost expected to be incurred as a result of engine maintenance and adjustment is about $12.00 as indicated by a sampling of seventy-five 1968 through 1972 model passenger cars.
2. The change in fuel economy measured before and after maintenance of the seventy-five car sample is insignificant.
3. Engine maintenance resulted in mean reductions of exhaust hydrocarbons and carbon monoxide of statistical significance while emissions of oxides of nitrogen remained unchanged.
4. With reference to emission inspection, key mode inspection exhibits greater correlation with 1975 Federal exhaust emission test procedures than does inspection by idle emission concentration.
5. Passenger car exhaust emissions can be better identified by key mode emission inspection than by inspection of idle emission concentration only.
6. Reduction of exhaust hydrocarbons and carbon monoxide is more cost effective by idle emission inspection than by key mode inspection at 10, 20, 30, 40 and 50 percent rejection rates.

SECTION II

RECOMMENDATIONS

This program was designed to evaluate practical solutions to a complex problem under laboratory conditions. It was not within the scope of the study to define all of the variables associated with the problem nor to develop emission reduction factors under field conditions nor to develop long term cost effectiveness factors. It is recommended, however that field evaluations be conducted and long term cost effectiveness be determined.

In consideration of several factors found to exist with respect to engine adjustment, it is suggested that field evaluation be preceeded by orientation and training sessions for vehicle maintenance personnel. In the conduct of such a program, it is recommended that the same concepts of emission inspection and rejection which were evaluated in this study be applied.

It is known that vehicle emissions at altitude are intrinsically high. With reference to emissions at altitude, a quantity of new data was developed by this study. It is recommended that this data be compared with equivalent data developed at lower elevations to further identify differences and the implied potential requirement for greater emission reductions. Additionally, data should be further examined to identify any significant trends in high emissions with respect to parameters such as engine size, vehicle weight, etc., not investigated by this study.

Although concepts investigated by this study are not new, their significance may not be fully understood nor appreciated. Field evaluation would serve as a proving grounds where information on a more practical level would be generated. This information will provide additional input by which a program of greater magnitude would be guided. It is therefore recommended that a pilot program be instituted and evaluated prior to the establishment of a mandatory emission inspection and maintenance program of any significance.

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SECTION III

INTRODUCTION

Background

Motor vehicles are recognized as a major source of air pollution in major cities throughout the United States. As a result, methods are presently being sought by which vehicle pollution can be reduced.

Starting within the State of California, laws were enacted to regulate emissions of certain defined harmful pollutants from motor vehicles. Subsequently, standards for motor vehicle emissions have become more inclusive and more stringent, both as a result of statewide efforts of California regulatory agencies, and more recently by the nationally directed activities of the U.S. Environmental Protection Agency. As a result of these efforts, new motor vehicles have been produced in compliance with emission standards for several years at generally lower emission levels for each successive vehicle model year. However, in an effort to continue to reduce emissions from motor vehicles, many problems continue to exist.

Although motor vehicles comply with Federal Emission Standards when manufactured, several factors remain as obstacles to continued low emission vehicle operation. As vehicles become older and accumulate mileage, deterioration in engine component parts and accessories tends to occur which is accompanied by corresponding changes in emission levels. These changes are generally in a direction considered to be undesireable. Studies have shown that this tendency can be reversed through corrective maintenance and adjustments (Reference 1). These same studies indicate that emissions are not maintained at manufacturer's standards by the maintenance to which vehicles are normally and voluntarily exposed. Thus, in an effort to minimize the contribution of motor vehicles to undesireable loading of the atmosphere, it is considered necessary to investigate other methods of maintaining low emission levels. Hence, studies have been initiated to investigate feasibility of mandatory emission inspection and maintenance (Reference 2).

The State of Colorado is presently considering the establishment of a mandatory vehicle emission inspection and maintenance program. An independent contractor was selected to conduct a feasibility study. Specifications for the study are detailed and comprehensive, and the Colorado Health Department expressed a desire to have the study completed

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in time to review the results prior to the 1973 Colorado Legislative Session. With a completion date as a main consideration, the Health Department decided to proceed with the study without the inclusion of an actual testing program. Following the decision to proceed, reservations concerning a void in emission data taken at altitude were expressed. Additionally, the advisability of using sea-level emission data to fulfil certain critical requirements of the Colorado study was questioned. Automotive Testing Laboratories, Inc. (ATL) responded by submitting a proposal to conduct vehicle emission tests at altitude. The proposal was submitted to Region VIII of the Environmental Protection Agency (EPA). The Regional EPA Office, headquartered in Denver, Colorado, and the EPA Office of Air Programs at Ann Arbor, Michigan recognized potential deficiencies in the Colorado study and contracted with Automotive Testing Laboratories, Inc. to provide current emission data to supplement the Colorado Study.

Statement of the Problem

Approximately 4 percent of the population of the United States live at elevations of 3000 feet or more above sea-level. Privately owned passenger cars are similarly distributed throughout the U.S. and about 4 percent of registered vehicles are operated at elevations above 3000 feet. Passenger car registrations in the State of Colorado alone exceed one million vehicles in 1972. As is the situation in cities at or near sea-level in elevations, population centers located at higher elevations are exposed to high levels of air contamination. Studies conducted during the past several years indicate motor vehicles to be a major source of atmospheric contamination in virtually all of the larger cities of the U.S., regardless of geographic setting.

Although volumes of data have been collected and analyzed concerning methods by which motor vehicle emissions can be controlled, relatively little data is available with respect to vehicle emissions at altitude. The Environmental Protection Agency, has gathered emission data from vehicles operating in the Denver Metropolitan Area. In support of two studies previously conducted (References 3 and 4), recent test results show carbon monoxide and hydrocarbon emissions to be significantly higher at higher altitude and emissions of oxides of nitrogen to be lower.

In addition to changes in altitude, a major factor known to affect emissions is the frequency and quality of maintenance to which a vehicle is exposed. To a large extent, maintenance practices are dictated by the environment in which a vehicle is required to operate. A marginal electrical system, for example, is more likely to receive attention in a northern climate as cold weather approaches and engine starting becomes increasingly more difficult. In turn, emissions are expected to decrease as poorly operating components are properly adjusted and maintained. Thus, exhaust emissions in the Rocky Mountain Region, or more specifically, the State of Colorado, are affected not only by altitude, but are also indirectly influenced by climatological conditions.

Colorado's feasibility study of vehicle emission inspection was precipitated as a result of the poor quality of atmosphere over Metropolitan Denver. Previous studies indicate that emissions from motor vehicles are a major contributor to Denver's poor atmospheric quality. Furthur, comparative data indicates motor vehicle emissions in Denver are greater, because of the higher elevation, than at lower elevations on a per mile basis. Because of the unique combination of elevation, climate, and vehicle maintenance and adjustment practices resulting from this combination, it is suspected that emission inspection and maintenance concepts proven elsewhere may not necessarily produce the same results when applied in Colorado.

Purpose of the Study

The overall purpose of the study is to provide the Environmental Protection Agency with data to assist local air pollution regulatory bodies in developing effectual emission control and abatement programs. With respect to the Rocky Mountain Region, the State of Colorado is now evaluating methods by which emissions from motor vehicles can be controlled. Other mountain states will undoubtedly find it necessary to do likewise. Before EPA can assist and recommend programs, certain specific information must be obtained, which should be investigated in the environment in which problems exist. Various concepts of motor vehicle emission control have been investigated in other areas of the United States. Many of them have been shown to be too complex and uneconomical to be applied on a scale broad enough to have an impact on the environment. In the State of Colorado, interest has been expressed in a few concepts which have been shown to be practical elsewhere. Several of these concepts are presently under evaluation with respect to a mandatory motor vehicle emission and inspection and maintenance program. Therefore, this study is designed to provide information relative to:

> Effectiveness of engine maintenance and adjustments as a method of reducing exhaust emissions from motor vehicles.

Establishment of direct costs to the motorist expected to be incurred as a result of engine maintenance and adjustments.

Evaluation of Key Mode and Idle inspection procedures as potential emission identification regimens.

Development of correlations between the Federal Emission Test Procedure and Key Mode exhaust emission concentration measurements and Key Mode mass emission measurements.

Expansion of baseline exhaust emission data developed at Denver's elevation.

This study then, is to provide additional information relative to the effectiveness of emission control concepts as applied in the Colorado environment.

Scope of the Study

The scope of the study consists essentially of three phases. They are:

To develop a current compilation of Colorado Motor Vehicle Registration data.

To conduct exhaust emission tests and maintenance on a representative sample of vehicles.

To compile and analyze test and maintenance data as generated by testing and maintenance procedures.

General Specifications of the Study

One of the main considerations in the conduct of an investigational study of this nature is that of sample selection. In order to develop data which adequately describes a particular situation it is normally desireable to select a sample which is representative of a larger population, preferably by a method of randomized selection. However, regardless of the care with which an experiment is designed, for one reason or another, some bias is inadvertently introduced into the experiment.

Another segment of the study which requires special consideration is that of engine maintenance. To evaluate the effect of maintenance, vehicles were scheduled for initial tests in the condition in which they were received.

Maintenance was then performed and the vehicles were retested. Some doubt existed as to the basis for determination of the degree of maintenance and the specific areas in which it was to be performed. After careful consideration, the decision was made to place a limitation on maintenance costs for each individual vehicle based on typical labor rates and retail parts costs. It was furthur decided that, based on a subjective evaluation, engine maintenance and adjustments would be performed only in those areas known to affect emissions. Carburetion and ignition malfunctions and misadjustment would receive priority.

Several concepts in vehicle emission inspection have been developed and evaluated during the past several years. It was not the intent of this study to re-evaluate these concepts. Previous investigation, as indicated by the EPA, show the Clayton Key Mode (Reference 5) to be high on a list of potential inspection methods for state programs. Although emission inspection at engine idle is a less desireable inspection method, the State of Colorado expressed interest with regard to inclusion in its study as a potential inspection regimen. Both of these methods are included for evaluation.

Although the study was completed in a relatively short period of time, a large quantity of new data was developed. Analysis of the data was performed in those areas considered to be critical to satisfy certain requirements of the Colorado emission inspection feasibility study. In the development and subsequent presentation of data, care was taken to assemble and report data in its entirety so as to facilitate the use of this data by other interested organizations.

SECTION IV

EXPERIMENTAL DESIGN

As the study was initially conceived, it was logical that it should be divided into three distinct, but interacting phases. This section describes the consideration given to the development of each phase.

Phase I

The first phase of the study consists of the development of current Colorado motor vehicle registration data and selection of a vehicle test sample.

The State of Colorado had included a requirement for projected motor vehicle registration data in its feasibility study specifications. Data was to be developed in order to establish an emission reduction forecast, as a result of applied emission reduction concepts. Consideration was given to the anticipated effort involved in accurately predicting motor vehicle registrations and to the detail which was thought to be ultimately required. At the outset, it was believed that reasonably good correlation could be established between the Federal Test Procedure and Key Mode mass emission data. It was furthur believed that correlation could be established between Key Mode concentration and mass emission data. Assuming these correlations would be established, additional emission data could then be developed by less complex and costly test procedures. The conclusion was that registration data should be produced in as much detail as possible so subsequent data could be expanded to more accurately predict emission inventories. This phase of the study was designed in such a manner that projections could be made more comprehensive at but slight increase in overall effort.

Prior to initiation of the testing program it was considered necessary to have at least a segment of the registration data compiled. The desire was to have current registration data available for selection of vehicles for emission sampling. Since 1972 calendar year Passenger Car Registration Data have not been published, it was necessary to make projections of 1972 data from data published in previous years.

There are numerous ways by which a sample can be selected. Theoretically, a purely random method of sample selection would have yielded a sample which would have been representative of the population and totally satisfied the intent

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of the study. However, due to limits of access to the population, a purely random sample was not feasible. Subjective reactions of vehicle owners who wish to participate or not to participate tend to bias a sample even if access were not limited. Owners of a particular vehicle, by make, or model year, or in some condition of repair, etc. are enthusiastic or are not enthusiastic about participation. In the design of this study these factors were considered. The conclusion finally reached was that compromises in sample selection would have to be made. Although compromising approaches were carefully considered prior to adoption, bias in the sample is known to have been introduced and its effect is difficult to evaluate.

Phase II

The second phase of the study was to consist of conducting exhaust emission tests and maintenance on vehicles selected in Phase I.

In the process of selecting emission test procedures, it was considered desireable to choose a procedure which most accurately determined representative emission levels. As a secondary consideration, it was desireable to select a procedure used previously to evaluate vehicle emission levels in the Denver area (Reference 6). The 1975 Federal Test Procedure was subsequently chosen as the primary test procedure since it satisfied both requirements.

Consideration was then given to the selection of less complex emission inspection procedures. The Colorado feasibility study specifications expressed interest in two procedures, the idle test and the Key Mode Test. EPA, Region VIII, expressed an interest in the Key Mode procedure since, of the many short test cycles developed, the Key Mode procedure appeared to satisfy many of the requirements for a short inspection procedure. Key Mode was subsequently selected as the short test cycle. The idle test procedure was also included since data at idle could be extracted from the idle mode of the Key Mode procedure with little additional effort.

With respect to engine maintenance and adjustment some uncertainty initially developed as to specifications to which engines would be adjusted. The uncertainty developed as a result of purported changes in original factory specifications commonly practiced by local maintenance organizations to improve engine performance at altitude. After conferring with the EPA Project Officer and in consideration of restrictions imposed by Federal Regulations (Reference 7), it was decided that original factory specifications would be maintained (one exception to be discussed later).

There are several approaches which can be taken with respect to an evaluation of the effect of engine maintenance in controlling emissions. For example, a sample could be divided into sub-sets. One sub-set would receive an idle adjustment only and another a complete engine tune-up. Subsequent analysis of data would reveal the individual effectiveness of each procedure. This was not the approach employed by this study, however. First of all, the size of the sample did not permit division of the sample into sub-sets. Secondly, the tactic employed here was that of establishing a maximum emission reduction factor which could be expected as a result of a rather extensive maintenance and adjustment program.

Phase III

The third phase of the study consists of the analysis of data.

In consideration of the fact that very little emission data is available at Denver's altitude, the program was designed to accumulate as much new data as practical within economic restraints of the program. This was accomplished.

In the analysis of data it was thought that primary consideration should be given to those areas that were of express interest in the Colorado Study. Upon examination of the specifications for the Colorado Study, it was concluded that the testing program should be designed primarily to determine effectiveness and costs of engine tune-up and the ability of Key Mode and Idle inspection to identify emissions. Analysis and subsequent presentation of data were designed to show the results of this determination, and a comprehensive statistical analysis is provided.

SECTION V

TEST PROGRAM DESCRIPTION

Previous sections have described the background and stated the problems in emission control at higher elevations. A description of the purpose and scope of the study were also presented along with some of the special considerations involved in the design of the program. In order that the results of the study may be better understood, this section is presented to describe the step by step procedure undertaken to complete each phase of the program.

Development of Colorado Motor Vehicle Registration Data

Several organizations assemble, process, and publish automotive statistical data. As a result, data relative to vehicle registrations and original equipment sales is available in several different forms.

In order to minimize discrepancies which may have been introduced as a result of variation in the collection and processing of data, a single prominent source of statistical data was selected. This source also supplies data to automotive statistical publications. Vehicle registration data for calendar years 1963, 1965, 1967, 1968, 1969, 1970 and 1971 was assembled from copies of automotive publications or as directly supplied by the statistical firm. Additional copies of automotive publications were obtained which contained data relative to automobile sales by model year, make, body style and original equipment. Original factory sales data was then extracted for vehicle model years 1955 through 1972 and organized for subsequent analysis.

It was known that the task of predicting motor vehicle registrations was to be a relatively large one. A large quantity of data processing was involved. It was decided that the major part of the data would be processed by computer. In order to develop a computer program which would process and project registration data, it was first necessary to develop preliminary information. This was accomplished by manual plotting of data. Plots were completed on a quantity of registration data by Years in Service versus Percent Remaining in Service by vehicle make and model year. After a number of plots were completed, it was obvious that certain similarities existed in the data. Furthur examination revealed that each make of vehicle exhibited distinct failure characteristics. It was subsequently concluded that failure characteristics by make (Chevrolet, Ford, Plymouth, etc.) were sufficiently similar

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so as to permit treatment of data by the same method over several model years.

The next step in the process was that of selecting equations to which empirical data would best fit.

Examinations of manual plots of published registration data showed the existence of three distinct characteristics in data. The first was; in the year in which a vehicle model was first introduced, registrations were far below those for the same model in the subsequent year. The explanation is that in any given registration year, all new model vehicles had not been sold as of the final registration date. Registration years and model years do not coincide. Secondly, all model vehicles continue to appreciate for several years after introduction. This appreciation is probably coincident with the influx of population to the state. Thirdly, upon reaching a peak in registrations, a relatively smooth depreciation curve begins to develop. In order to establish reliable predictions of vehicle registrations it was necessary to develop equations for the three segments as just described.

The development of an equation for the first segment, that of a sudden increase in registration data in the first year after introduction, was a relatively simple operation. Data from previous years was examined and a simple factor was established from which first-year-after-introduction data could be predicted. Independent factors were developed for each make of vehicle.

The second equation developed was obtained by doing a least squares fit to empirical data from registration files. An equation was developed for each vehicle make.

The selection of a third equation which described the vehicle depreciation curve was completed by a more difficult procedure. In the development of product lines, manufacturers frequently use equations to predict long term failures based on a short term test. Listed among equations are Lognormal, Gumbel, Binomial, and Weibull. Of all equations in these general forms, it was thought that one of the four would best fit vehicle registration depreciation curves. All equations were tested and it was found that Weibull distribution best fit the data. This method was subsequently used to describe the third segment of registration attrition curves and an equation was established to describe each make of vehicle.

Figure 1, Computer Plot of Attrition Curve, is an actual plot based on registration data from past years and predicted registrations from future years. The plot shown is for 1961 model year Plymouths previously registered or predicted to be registered in Colorado. In the illustration, zero (0) Years in Service corresponds to the middle of the calendar year in which the vehicle was originally sold, in this case, 1961, and 10 Years in Service corresponds to mid-1971.

As previously discussed, it was decided that predicted registration data should be developed in as much detail as practical and should include data on 1955 through 1972 vehicle model years since they comprised over 95% of Colorado passenger car registrations. Specifications for a catalog of predicted vehicle registrations were established which contained projections of registrations of 1955 through 1972 models by:

Model Year
Make
Model
Vehicle Weight
Engine Displacement
Transmission Type
Carburetor Type
Vehicles Registered in Colorado as of mid-year

1971
1972
1973
1974
1975

Procedures were then developed to compile and process the data.

First, the following tables were extracted from automotive publications:

1. Model Year Passenger Car Production, by Makes (manufacturer, make, model, units sold as a percent of total).

2. Standard Engines - Ratings and Performance (manufacturer, make, model, engine displacement, curb weight).

3. Optional Engines - Ratings and Performance (manufacturer, make, model, engine displacement, curb weight).

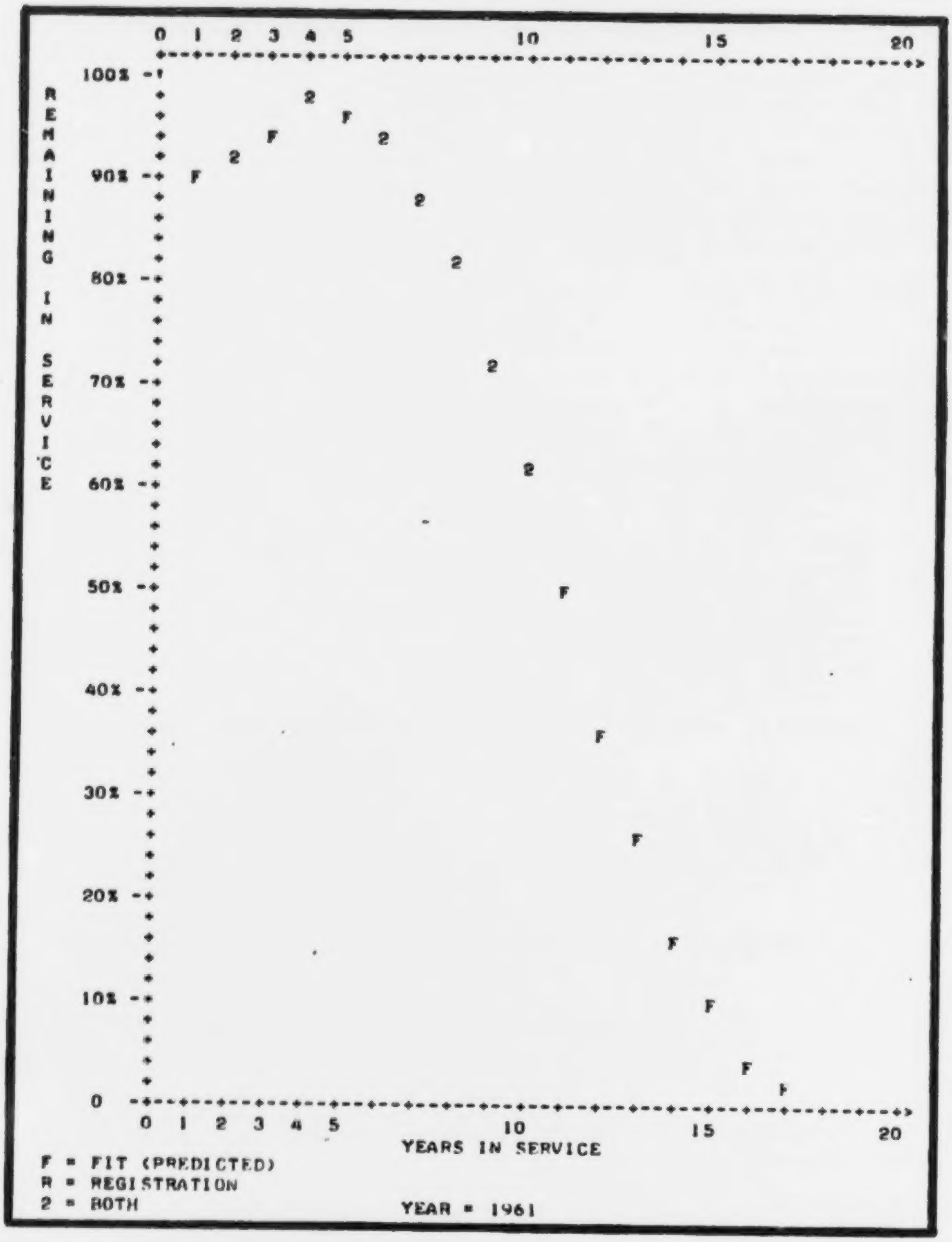


Figure 1, Computer Plot of Attrition Curve

4. Model Year Factory Installation of Selected Equipment (transmission, automatic, manual 3-speed, manual 4-speed; engines, V-8, 6 cylinder).

5. Exhaust Fuel and Cooling System (manufacturer, make, model, carburetor type)

A listing was then established and column headings were assigned. Data was then transferred from the automotive publication in terms of percent of sales by make, model, engine, transmission, and carburetion into appropriate columns. Figure 2, Flow Chart of Registration Data Development, shows the method by which vehicle registration data was compiled. Upon completion of the compilation, computer input tapes were punched, input, and combined with attrition curves which had been developed for each make and model year. The Colorado Motor Vehicle Registration Catalog (Predicted) was then printed.

Based on catalog data, predicted registration of 1955-1972 model passenger cars for Colorado was obtained for years 1972 through 1975.

A summary of 1972 data is shown in Table 1, Distribution of Passenger Cars by Model Year in Colorado as of July, 1972. It is interesting to note that more than half of the passenger cars currently registered in Colorado are not as yet equipped with factory installed exhaust emission control systems.

Test Sample Selection

In selecting a sample of vehicles for testing, a purely randomized selection would be ideal. However, as mentioned earlier, this approach was not feasible. A compromise approach was then recommended which consisted of randomly selecting vehicle owners from passenger car registration files, addressing correspondence to them and requesting participation. Due to a technicality in Federal laws, this method proved to be too cumbersome in view of time limitations placed on the program. An alternate approach to secure vehicles was then developed.

A news release was prepared and submitted to the news-media which described the program in general and indicated a method by which car owners could express their desire to participate. The release was carefully worded so as to avoid mention of maintenance to be performed or any item thought to possibly introduce bias beyond that which seems to be inherent in public oriented programs. Participation was encouraged by offering a $25 U.S. Savings Bond to those

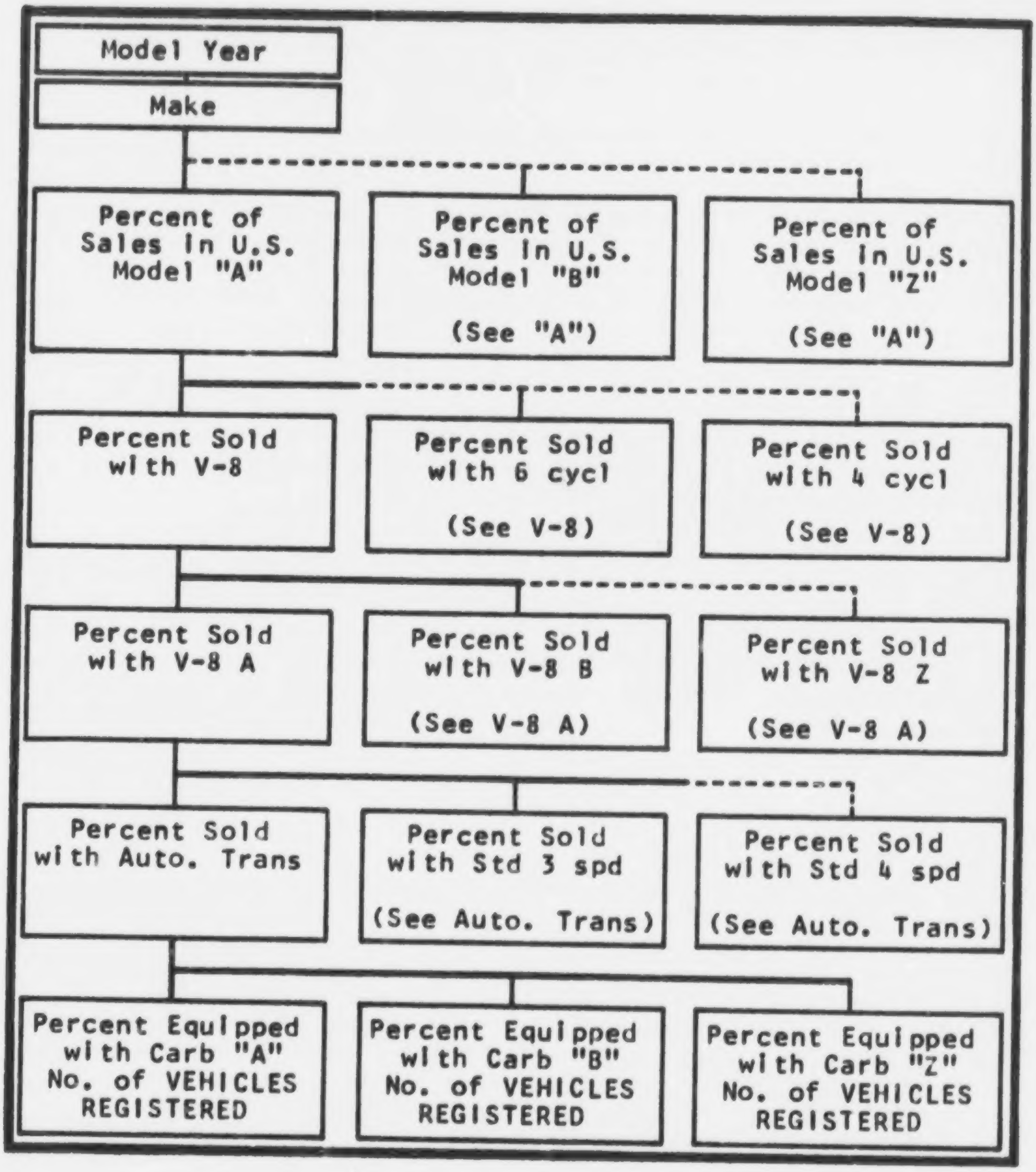

Model Year
Make
Percent of Sales in U.S. Model "A"
Percent of Sales in U.S. Model "B" (See "A")
Percent of Sales in U.S. Model "Z" (See "A")
Percent Sold with V-8
Percent Sold with 6 cycl (See V-8)
Percent Sold with 4 cycl (See V-8)
Percent Sold with V-8 A
Percent Sold with V-8 B (See V-8 A)
Percent Sold with V-8 Z (See V-8 A)
Percent Sold with Auto. Trans
Percent Sold with Std 3 spd (See Auto. Trans)
Percent Sold with Std 4 spd (See Auto. Trans)
Percent Equipped with Carb "A" No. of VEHICLES REGISTERED
Percent Equipped with Carb "B" No. of VEHICLES REGISTERED
Percent Equipped with Carb "Z" No. of VEHICLES REGISTERED

Figure 2
Flow Chart of Registration Data Development

Model Year		Number Registered		Percent of Total
1972	EXHAUST	60,373		5.86
1971		114,939		11.14
1970	EMISSION	90,540	44.7%	8.80
1969		96,131		9.29
1968	CONTROLLED	99,861		9.68
1967		91,039		8.80
1966		94,156		9.09
1965		89,453		8.70
1964		76,017		7.33
1963	NOT	62,956		6.06
1962		31,768	55.3%	3.03
1961	CONTROLLED	34,750		3.32
1960		29,295		2.83
1959		17,748		1.76
1958		6,984		0.68
1957		5,157		0.49
1956		4,543		0.49
1955		3,697		0.39
1954 and earlier		23,215		2.30
		1,032,552		100.0%

Table 1, Distribution of Passenger Cars by Model Year in Colorado as of July, 1972 (Predicted)

owners whose vehicles were finally selected for testing. A negative thought developed with respect to the Savings Bond. Concern was, the Savings Bond would attract an economic segment of the population with an immediate need for financial assistance. However, this was quickly dispelled with the realization that Bonds were not immediately convertible, and considering vehicle model years from which the sample was to be selected, all potential participants were in roughly the same economic situation.

The news release produced the desired response. A telephone number was indicated, by which candidates could express a desire to participate. Upon receipt of a call from a candidate, the desire to participate was first determined, then a detailed explanation of the program was offered. In all, 268 calls were handled. A comprehensive analysis of vehicle distribution was not performed on the total sample of vehicles offered for testing. However, the validity of the sample is indicated by the fact that seventy-five of seventy-five vehicles, by make and model year, originally designated to fit sample specifications were selected from the group.

Sample Specifications
The study was designed to investigate emissions from a representative sample of seventy-five vehicles from model years 1968 through 1972 (factory equipped exhaust emission control systems) operating in the Denver Metropolitan area. Design considerations included vehicle selection in proportion to appearance in the population by make and model year. In some instances it was necessary to combine groups over two or more model years. Table 2, Distribution of 75 Vehicle Sample, by Make and Model Year, shows the sample which was ultimately selected and tested. Upon verification of sample fit, participating vehicles were scheduled for testing and maintenance.

Make	No. of Vehicles by Model Year					
	1972	1971	1970	1969	1968	Total
Am.Motors			1	1		2
Buick	1		1	1	1	4
Cadillac	1					1
Chevrolet	2	3	3	3	3	14
Chrysler	1			1		2
Dodge		1	1	1	1	4
Ford	2	4	3	3	3	15
Imperial						0
Lincoln			1			1
Mercury		1	1	1	1	4
Oldsmobile		1	1	1	1	4
Plymouth	1	1	2	1	1	6
Pontiac		1	1	2	2	6
Imports	2	3	3	2	2	12
Total	10	15	18	17	15	75

Table 2, Distribution 75 Vehicle Sample by Make and Model Year

Vehicle Emission Testing
Upon receipt of a test vehicle, an inspection was performed to determine incoming condition with respect to dents, scratches, etc., safety, and integrity of the exhaust system.

After the vehicle was determined to be acceptable, it was moved into the laboratory to begin the specified 12 hour temperature soak prior to testing.

The primary emission test by which vehicles were tested were those specified by 35 Federal Register 219, Part II, November 10, 1970 and as amended in 36 Federal Register 55, March 10, 1971, the 1975 Federal Test Procedure. Modifications to the analytical system were not incorporated and vehicle operation was continued beyond the 505 seconds of the hot transient portion of the test for a full 1372 seconds. Key Mode emission tests were then performed.

Key Mode testing consists of vehicle operation at three conditions described as high cruise, low cruise, and idle. Table 3, Key Mode Operation, indicates vehicle speed and dynamometer loads at which Key Mode tests were conducted by weight categories of vehicles.

Mode	Vehicle Weight (lbs)	Vehicle Speed (Mph)	Dynamometer Load (Hp)
High Cruise	Over 3800	49	29
	2800-3800	45	23
	Under 2800	37	14
Low Cruise	Over 3800	33	11
	2800-3800	30	9
	Under 2800	23	5
Idle	-	-	-

Table 3, Key Mode Operation

1975 Federal Exhaust Emission Tests were conducted according to specified procedures except as noted earlier. Key Mode emission data was obtained by two methods. By the first method a small sample of exhaust gas was pumped from the tailpipe of the vehicle to the analytical system and continuous traces of carbon monoxide (CO), carbon dioxide (CO2), hydrocarbon (HC), and oxides of nitrogen (NO_x) concentrations were recorded. The sampling period started after traces stabilized and was continued for a period of two minutes. Coincident with tailpipe sampling, the constant volume sampler (CVS) sample circuit was energized and a dilute sample of exhaust was collected in the sample bag.

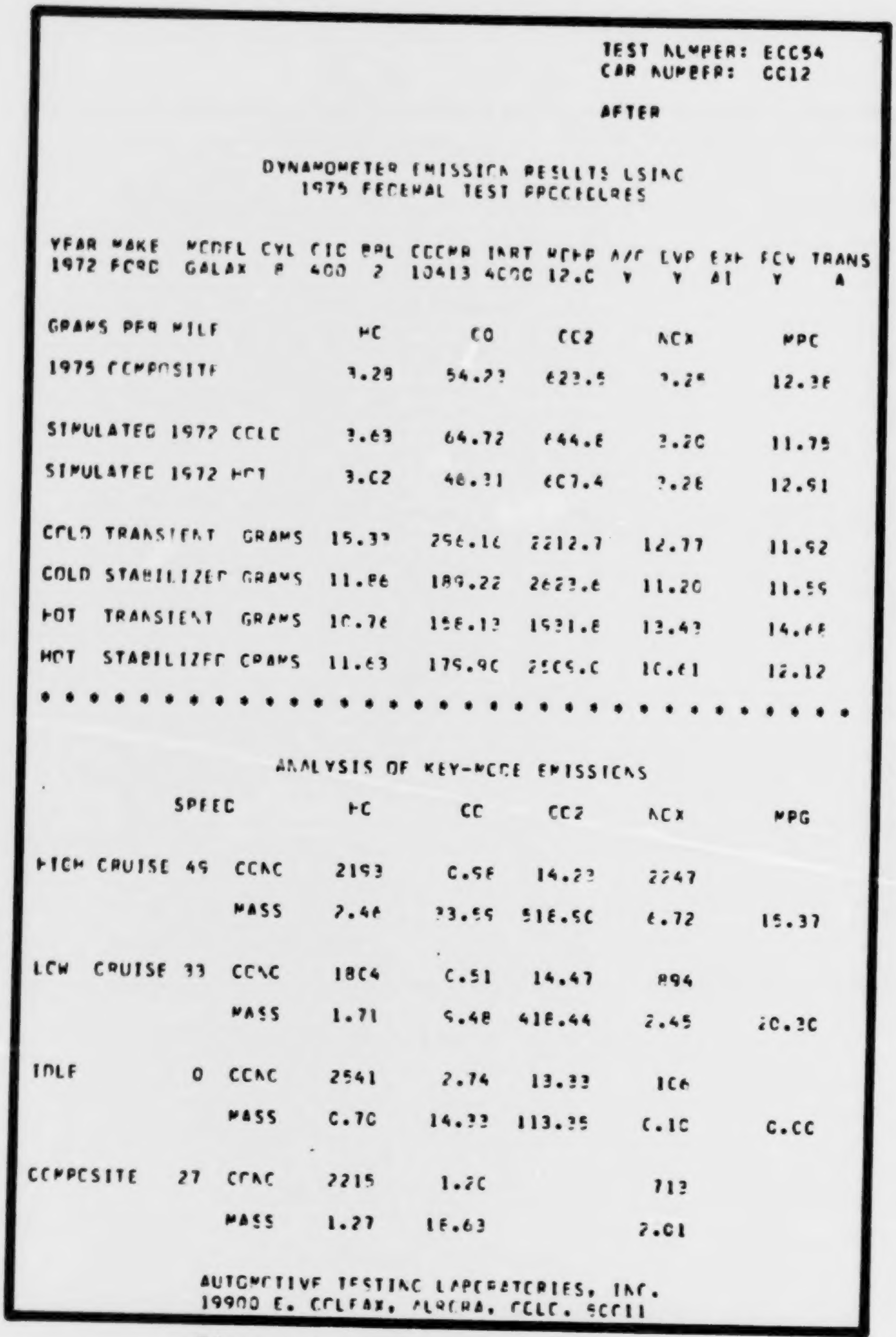
The second method of obtaining data was to subsequently analyze the dilute sample bag for CO, CO_2, HC, and NO_x. Calculations were then performed. Emission data was subsequently reported as shown in Figure 3, Exhaust Emission Data Reported from 1975 FTP and Key Mode Operation. Vehicle maintenance was completed and the sequence of emission testing was repeated on the following day.

Engine Diagnosis, Maintenance and Adjustment

It was not the intent of this study to evaluate idle or Key Mode inspection as potential diagnostic procedures. Rather, the primary concern was that of establishing direct costs expected to be incurred by the vehicle owner as a result of a fairly extensive inspection and maintenance procedure. Therefore, several methods of diagnosing engine malfunction and maladjustment were initiated.

During Key Mode Operation, engine diagnostic console (oscilloscope) leads were attached to the engine, and ignition patterns were observed by the vehicle operator. Simultaneously, continuous tailpipe exhaust emission traces were observed by the instrument operator. Apparent malfunctions were noted. Upon completion of the first series of emission tests the vehicle was removed from the dynamometer and other inspections were performed. Diagnostic reports from vehicle and instrument operators and diagnostician were combined and a decision was made as to correction of indicated malfunctions. Observations of ignition oscilloscope traces indicated general ignition system condition. In some cases, marginal malfunctions, such as wear on the distributor cam, air/fuel ratio unbalance, low or high spark plug firing voltages, etc., were indicated. However, malfunctions were considered as requiring attention only if severe enough to cause incipient misfire or abnornally high tailpipe emissions as observed on analytical console recorders. Subsequently, direct inspection of engine parts either reinforced or weakened conclusions with regard to suspected malfunctions. Figure 4, Engine Diagnostic Analysis Report, indicates the extent of diagnosis and the areas in which diagnosis was performed. Labor charges to correct malfunctions were estimated based on a Flat Rate Manual for mechanics at a labor rate of $10.00 per hour. Parts costs were determined from retail prices normally charged by a local automotive parts supplier.

With respect to specific items, general guidelines were established and tolerances assigned. In some instances, it was merely necessary to determine if an item was operational or not. This was the situation with respect to the heat riser and PCV valve, and for air injected engines, the air



```
                                                      TEST NUMBER: E0054
                                                      CAR NUMBER:  0012

                                                      AFTER


                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HCHP A/C EVP EXH ECV TRANS
1972 FORD  GALAX  8  400  2  10413 4000 12.0  Y   Y  AI   Y    A

GRAMS PER MILE              HC        CO       CO2      NOX       MPG

1975 COMPOSITE             3.29     54.23     623.5     3.28     12.36

SIMULATED 1972 COLD        3.63     64.72     644.6     3.20     11.75

SIMULATED 1972 HOT         3.02     46.31     607.4     3.26     12.91

COLD TRANSIENT  GRAMS     15.33    256.16    2212.7    12.77     11.92

COLD STABILIZED GRAMS     11.86    189.22    2623.6    11.20     11.59

HOT  TRANSIENT  GRAMS     10.76    158.13    1531.8    13.43     14.66

HOT  STABILIZED GRAMS     11.63    179.90    2509.0    10.61     12.12
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


                        ANALYSIS OF KEY-MODE EMISSIONS

               SPEED         HC         CO       CO2      NOX       MPG


HIGH CRUISE 49  CONC        2193       0.98     14.23     2247

                MASS        2.46      33.59    518.50     6.72     15.37

LOW  CRUISE 33  CONC        1804       0.51     14.47      894

                MASS        1.71       9.48    418.44     2.45     20.30

IDLE         0  CONC        2541       2.74     13.33      106

                MASS        0.70      14.33    113.35     0.10      0.00

COMPOSITE   27  CONC        2215       1.20                713

                MASS        1.27      16.63               2.01

                 AUTOMOTIVE TESTING LABORATORIES, INC.
                 19900 E. COLFAX, AURORA, COLO. 80011
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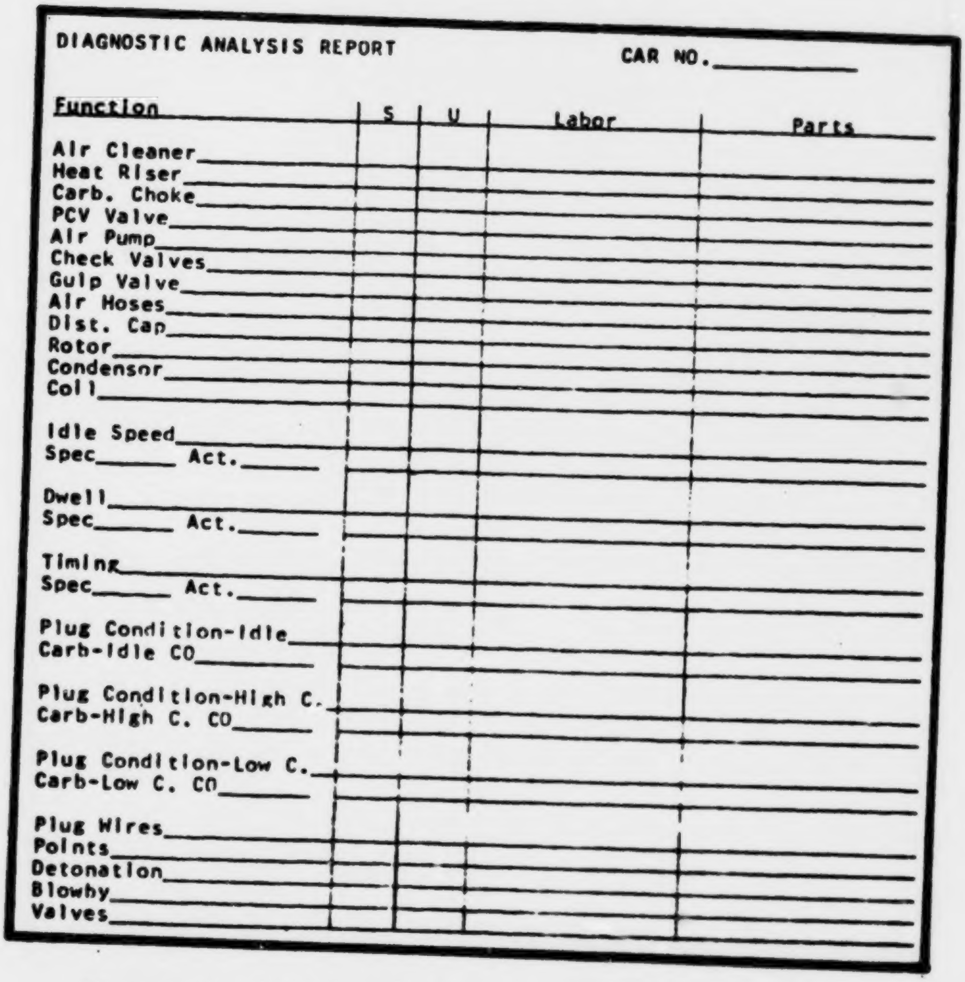
Figure 3, Exhaust Emission Data
Reported from 1975 FTP and Key Mode Operation



DIAGNOSTIC ANALYSIS REPORT CAR NO.__________

Function	S	U	Labor	Parts
Air Cleaner				
Heat Riser				
Carb. Choke				
PCV Valve				
Air Pump				
Check Valves				
Gulp Valve				
Air Hoses				
Dist. Cap				
Rotor				
Condensor				
Coil				
Idle Speed				
Spec______ Act.______				
Dwell				
Spec______ Act.______				
Timing				
Spec______ Act.______				
Plug Condition-Idle				
Carb-Idle CO				
Plug Condition-High C.				
Carb-High C. CO				
Plug Condition-Low C.				
Carb-Low C. CO				
Plug Wires				
Points				
Detonation				
Blowby				
Valves				

Figure 4, Engine Diagnostic Analysis Report pump, check valves, gulp valve, and air hoses. In other instances, such as inspection of the air cleaner element, a subjective evaluation was required. Air cleaner elements were scheduled for replacement if either oil soaked or if a moderate tap of the element against a hard surface indicated the existence of excessive dust. Elements that were merely discolored were not replaced. Idle rpm was adjusted if more than 25 rpm out of specifications, ignition timing was changed if more than 2 degrees out, and dwell was adjusted if out of manufacturers tolerance. The distributor cap was inspected and replaced if cracked or if evidence of arcing was noted. Contact points and distributor rotor were inspected and replaced at indication of moderate to severe pitting or mis-alignment. If point replacement was necessary, new condensers were also installed. When mis-fire was noted during Key Mode operation, spark plugs were removed, inspected and replaced if elements showed signs of erosion or if moderate to severe deposits were noted. Spark plugs were replaced in complete sets where inspection indicated malfunction of one or more. Plug wires were generally examined; however, none were found to be defective. Indication of blowby, exhaust valve leakage, and detonation was also evaluated during Key Mode operation. After completion of diagnosis, and maintenance and ignition adjustment, a lean best idle adjustment was performed (minimum fuel at idle for best engine idling characteristics).

In the above discussion, carburetor choke adjustments were not mentioned. Upon receipt of the first few vehicles, it was noted among other things, that choke adjustments (bimetallic spring settings) were leaner than specified by the manufacturer. A casual survey of maintenance organizations in the Denver area revealed that a common complaint from vehicle owners was that of engine flooding during attempted cold weather starting. Generally, the flooding was attributed to choke settings which were too rich for this altitude. As a result, it was fairly common practice to set chokes leaner than specified. Since cold weather starting can be critical in the Colorado environment, it was decided that choke settings would not be altered unless severely out of specification.

A similar situation developed with respect to ignition timing. The same dealerships surveyed in regard to choke settings, reported that ignition timing was normally advanced from factory specified settings by 3 to 6 degrees. Since ignition timing is less critical with regard to engine starting and operation, it was decided that factory specifications for timing would be maintained.

Upon completion of engine diagnosis and maintenance, the vehicle was positioned in the temperature soak area in preparation for final emission tests. Figure 5, Vehicle Test and Maintenance Flow Chart shows the sequence through which a vehicle was routed from the time it was received until it was returned to the owner.

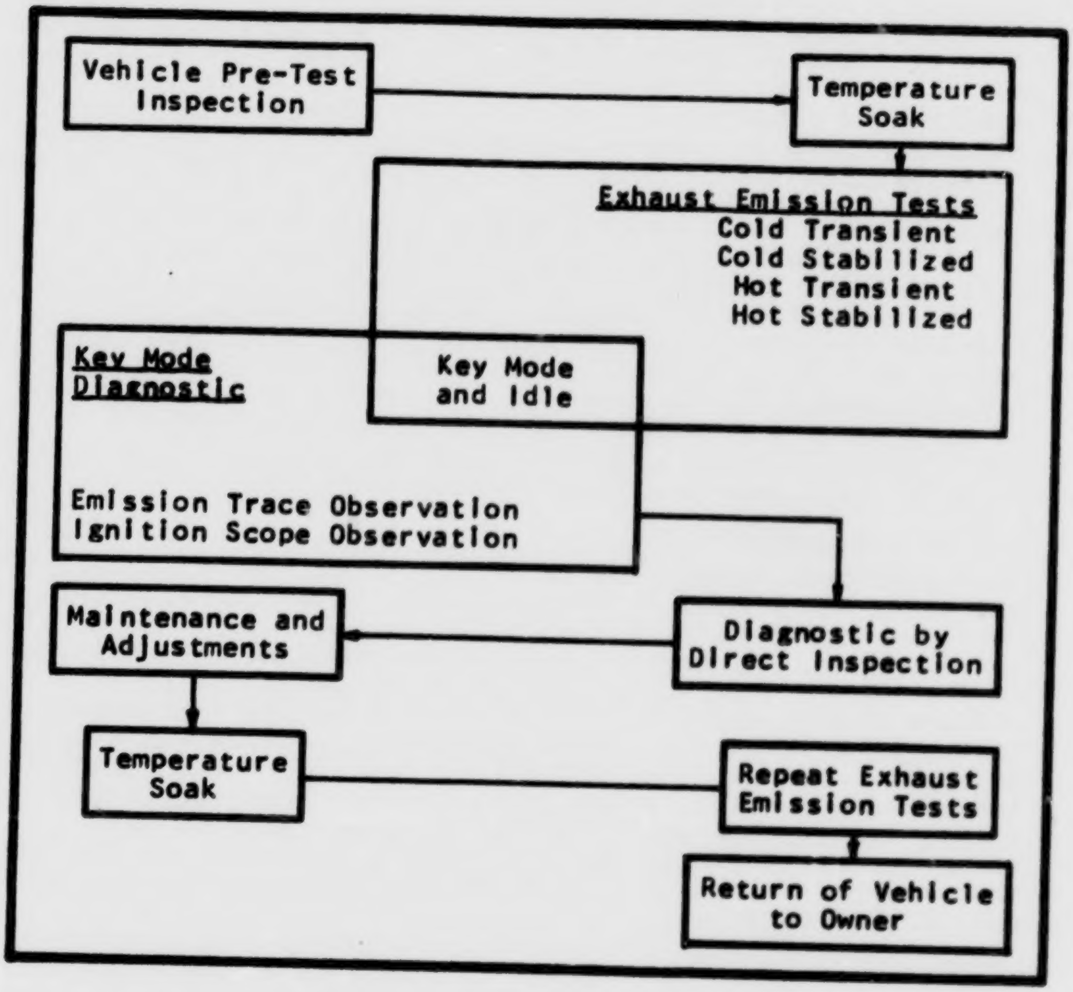

Vehicle Pre-Test Inspection
Temperature Soak
Exhaust Emission Tests
Cold Transient
Cold Stabilized
Hot Transient
Hot Stabilized
Key Mode Diagnostic
Key Mode and Idle
Emission Trace Observation
Ignition Scope Observation
Maintenance and Adjustments
Diagnostic by Direct Inspection
Temperature Soak
Repeat Exhaust Emission Tests
Return of Vehicle to Owner

Figure 5, Vehicle Test and Maintenance Flow Chart

Quality Assurance

In the design stages of the study, the obvious requirement for quality data was recognized. As a result, a system of equipment checks was instituted and maintained at prescribed regularity throughout the program.

Initially, all test equipment was inspected and determined to be in good operating condition. Exhaust gas analytical equipment was calibrated using gas blend concentrations as identified by EPA in its Ann Arbor Laboratory. Analytical instrument calibration curves were determined by the least squares method. Propane recovery tests and thermal converter efficiency checks were then performed and the chassis dynamometer was calibrated for speed and load, with load calibration determined by the coast down technique. Propane recovery, converter efficiency and dynamometer calibrations were performed according to the Federal Register referenced earlier.

As testing commenced, propane recovery and thermal converter efficiency checks were performed on a daily basis. Propane recovery tolerances were maintained at plus or minus 2 percent and converter efficiency at 100 percent as nearly as could be determined. Extensive leak checks were also performed on a daily basis. With regard to individual emission tests, the tailpipe sample probe was blocked and the analytic system was leak checked before each test series. Analytical system calibration checks were performed at frequent intervals during individual testing sequences.

Data Reduction and Analysis

Reduction of emission data as reported for the 1975 Federal Test Procedure was accomplished in accordance with procedures specified in the Federal Register (Reference 7). Emission data is reported for CO, CO_2, HC, and NO_x as measured from cold transient, cold stabilized, hot transient, and hot stabilized sample bags. Data from the hot stabilized portion of the test was not used in calculating emissions as reported for the 1975 Federal Test Procedure.

Emission data is also reported for simulated 1972 Federal Test Procedures. Simulated 1972 Cold data was obtained from the sum of individual exhaust gas components in grams from the cold stabilized and cold transient sample bags divided by 7.5 (the length of the driving cycle in miles). Likewise, Simulated 1972 Hot emission data was obtained from the sum of components in the cold stabilized bag and the hot transient bag divided by 7.5. Dynamometer Emission Results Using 1975 Federal Test Procedures by individual car are presented in the appendix. 1975 Composite, Simulated 1972 Cold, and Simulated 1972 Hot data are reported in grams per mile for HC, CO, CO_2, and NO_x. Fuel economy (MPG) is also reported for each test segment and for composite data as computed by a carbon balance method

(Reference 8). Data for Cold Transient, Cold Stabilized, Hot Transient, and Hot Stabilized segments of the test are reported in total grams for HC, CO, CO2, and NO_x.

Data from Key Mode Emissions is reported for High Cruise, Low Cruise, and Idle. Composite Key Mode emissions are also reported. Composite Key Mode emissions were determined by a multiple regression analysis of modal data from Key Mode operation explained in Appendix B, Key Mode Regression Analysis Equations. Key mode data is shown as concentration in parts per million (ppm) carbon for HC, ppm for NO_x, and percent for CO and CO_2. Mass data for Key Mode analysis is shown in grams per mile for High and Low Cruise, and grams per minute for Idle. Composite mass Key Mode data is shown in grams per mile.

After emission tests were completed and data was reduced, statistical analysis was performed on emission data developed during the program. Mean, standard deviation, and range calculations of pertinent data were performed by individual vehicle through all cars by year, make, and gross vehicle weight. Correlation factors and estimates of error were established between 1975 FTP and Idle and Key Mode emission data. Effectiveness of emission reduction is shown by the 1975 FTP, and Idle and Key mode, for CO, HC, and NO_x. Determinations were made of the ability of Key Mode and Idle inspection to identify high emitters at 20, 30, and 40 percent rejection levels for CO, HC and NO_x emissions and direct consumer costs were established for engine maintenance and adjustment.

SECTION VI

TEST RESULTS AND DATA ANALYSIS

This section describes the vehicle sample, results of emission tests on sample vehicles in the condition in which they were received, maintenance performed on the sample, and emission results obtained as a result of that maintenance. Also presented are repair cost estimates and statistical analysis of emission data.

Test Sample

Seventy-five 1968 through 1972 model vehicles were selected for testing in proportion to appearance in the population by make and model year. Distribution of the sample was not forced beyond make and model year. It was assumed that additional sample distribution by model, engine, transmission, etc., would occur in a random manner and would therefore satisfy sample requirements.

Figure 6, Distribution of Test Sample by Make and Model Year gives indication of the validity of the sample ultimately tested with respect to the sample required. The first number in parenthesis indicates the desired sample, (1), the second number indicates actual selection, 1. Horizontal lines indicate model year combinations designated by original sample specifications from which vehicle selections could be made.

A furthur indication of the validity of the sample is shown by distribution of transmission and engine types. Sales data published in 1970 (mean sample model year) reports the distribution of transmission sales during 1970 for passenger cars at 90 percent of vehicles sold with automatic transmissions and 10 percent of vehicles sold with manual transmissions, as compared to sample distribution of 87 percent and 13 percent respectively. Likewise, distribution of engine types in 1970 was reported for sales of V-8 engines at 89 percent and 6 and 4 cylinder engines at 11 percent compared with sample distribution of 86 percent and 14 percent respectively for American made passenger cars. In general, the sample was found to be representative of the 1968 through 1972 model passenger car population.

Maintenance

One of the primary considerations of the study was to determine the extent of maintenance required to correct engine malfunction or mis-adjustment in the 75 car sample. Methods by which malfunctions or mis-adjustments were determined were described earlier. With respect to mis-adjustment,

Make	No. of Vehicles By Model Year					
	1972	1971	1970	1969	1968	Total
Am.Motors	(1) --	(1) --	(1)1	(1)1--	(1)	(2) 2
Buick	(1)1--	(1)	(1)1	(1)1	(1)1	(4) 4
Cadillac	(1)1--	(1) --	(1) --	(1) --	(1)	(1) 1
Chevrolet	(2)2	(3)3	(3)3	(3)3	(3)3	(14)14
Chrysler	(1)1--	(1) --	(1)	(1)1--	(1)	(2) 2
Dodge	(1) --	(1)1	(1)1	(1)1	(1)1	(4) 4
Ford	(2)2	(4)4	(3)3	(3)3	(3)3	(15)15
Imperial	(1) --	(1) --	(1) --	(1) --	(1)	
Lincoln	(1) --	(1) --	(1)1--	(1) --	(1)	(1) 1
Mercury	(1) --	(1)1	(1)1	(1)1	(1)1	(4) 4
Oldsmobile	(1) --	(1)1	(1)1	(1)1	(1)1	(4) 4
Plymouth	(1)1	(1)1	(2)2	(1)1	(1)1	(6) 6
Pontiac	(1) --	(1)1	(1)1	(2)2	(2)2	(6) 6
Imports	(2)2	(3)3	(3)3	(2)2	(2)2	(12)12
Total	10	15	18	17	15	(75)75

Figure 6, Distribution of Test Sample by Make and Model Year

tolerances around factory specifications were established for idle rpm, ignition timing, and point dwell. Adjustments were performed if outside tolerances of:

± 25 rpm for idle speed
± 2 degrees for ignition timing
specifications for point dwell

and choke adjustments were performed if:

choke angles (bi-metallic spring)
were 2 notches lean of specifications
or richer

Go/no-go inspections were performed to determine condition of:

heat riser
PCV valve

and for air injected engines:

air pump
check valve(s)

gulp valve
air hoses

Subjective evaluations determined the condition of:

the air cleaner element

and instrumentation coupled with subjective analysis indicated condition of:

distributor rotor
distributor cap
contact points (and condenser)
spark plugs
ignition wires

In addition, dynamometer operation indicated:

blowby
detonation

All vehicles received lean best idle adjustments.

Table 4, Maintenance Status of 75 Vehicle Sample As Received, shows the general condition of vehicles as they were received and as determined by diagnosis. As indicated by Table 4, idle speed and ignition timing were items most frequently found to be out of specifications. Oddly enough, specifications for idle speed and ignition timing now appear on Emission Specification Labels affixed to late model vehicles at the point of manufacture. It should be noted that incoming status of maintenance and adjustment items were determined singularly, without regard for other adjustments also out of specifications, e.g., ignition timing and point dwell.

Of the 75 vehicles diagnosed with regard to items 1 through 14 in Table 4:
All vehicles required some attention. Furthur:

75 (100%) required attention to 1 or more items
67 (89%) required attention to 2 or more items
48 (64%) required attention to 3 or more items
26 (35%) required attention to 4 or more items
15 (20%) required attention to 5 or more items
2 (3%) required attention to 6 or more items

In addition, one vehicle required major replacement of emission control parts.

Item	Status As Received			
	Satis	Adj Req	Cleaning Req.	Repl Req.
75 Vehicles				
1. Idle Speed	9	66	N/A	N/A
2. Ignition Timing	9	66	N/A	N/A
3. Point Dwell	36	39	N/A	N/A
4. Choke Angle	62	13	N/A	N/A
5. Heat Riser	75	0	0	N/A
6. PCV Valve	74	N/A	0	*1
7. Air Cleaner	54	N/A	**2	19
8. Rotor	74	N/A	N/A	1
9. Dist. Cap	75	N/A	N/A	0
10. Points & Condensor	61	N/A	N/A	14
11. Spark Plugs(sets)	63	N/A	N/A	12
12. Ignition Wires	75	N/A	N/A	0
13. Detonation	75	N/A	N/A	N/A
14. Blowby	74	N/A	N/A	N/A
17 Vehicles				
15. Air Pump	16	N/A	N/A	*1
16. Check Valve	16	N/A	N/A	*1
17. Gulp Valve	16	N/A	N/A	*1
18. Air Hoses	16	N/A	N/A	*1

* Emission Controls Removed ** Oil Bath

Table 4, Maintenance Status of 75 Vehicle Sample As Received

Maintenance Costs

In the determination of maintenance costs, the labor rate was assumed to be $10.00 per hour (typical local rates are $10.00 to $12.00 per hour). To fix charges with respect to labor for engine maintenance, a Mechanics Flat Rate Manual was referenced and charges were estimated in accordance with listed flat-rate schedules. Independent estimates were determined for each vehicle. Estimates do not include labor incurred for diagnostic procedures. However, it is estimated that diagnosis by direct inspection was completed in less than 0.2 hours at a cost (base, $10 per hour) of less than $2.00 per vehicle. Total costs incurred in repair and adjustment for the 75 car sample is:

Labor	$611.00
Parts	$272.45
Total	$883.45

and the mean cost per vehicle is:

Labor	$ 8.15
Parts	$ 3.63
Total	$11.78

The initial specifications of the program fixed a nominal maximum cost to repair each vehicle at $25.00. However, during actual performance of the maintenance phase of the study, several vehicles were found to require repairs in excess of $25.00. With respect to three of these vehicles, replacement of spark plugs was required in addition to other maintenance. In referencing the flat rate manual, it was noted that labor allocated for spark plug replacement appeared to be unusually high due to interference from an existing air conditioning compressor or similar item. In consideration of the general condition of each engine in question, it was concluded that neither spark plugs nor other items as a group could be ignored. Cost estimates include charges for complete maintenance on the three vehicles. Table 5, Distribution of Maintenance Costs - 75 Vehicles, shows maintenance cost distribution for the sample in $5.00 increments.

Vehicles			Cost Range	Labor Cost	Parts Cost	Total Cost	Mean Cost
(No)	(%)	(Cum%)					
1	1	1	40.00-44.99	24.00	16.13	40.13	40.13
0	0	1	35.00-39.99	0	0	0	0
3	4	5	30.00-34.99	56.00	44.22	100.22	33.40
5	7	12	25.00-29.99	82.00	52.15	134.15	26.82
5	7	19	20.00-24.99	59.00	56.40	115.40	23.08
9	12	31	15.00-19.99	102.00	49.50	151.50	16.83
9	12	43	10.00-14.99	70.00	38.70	108.70	12.08
33	44	87	5.00- 9.99	190.00	15.35	205.35	6.22
10	13	100	0 - 4.99	28.00	0	28.00	2.80
75	100			611.00	272.45	883.45	11.78

Table 5, Distribution of Maintenance Costs - 75 Vehicles

Fuel Economy

As mentioned earlier, fuel consumption data was calculated for each segment of the test. Mean miles per gallon (mpg) as calculated from the 1975 FTP emission data is:

Before Maintenance	15.19 mpg
After Maintenance	15.27 mpg

which represents a mean increase in fuel mileage of 0.08 miles per gallon. Assuming an annual mileage accumulation on a per vehicle basis of 12,000 miles and fuel cost at $0.35 per gallon, fuel costs would decrease from $276.50 per year to $275.05 per year or $1.45, an insignificant amount.

Emission Reduction

Emission data is reported for the 1975 FTP, Key Mode and Idle test procedures. Both mass (grams per mile) and concentration data is reported for Key Mode procedure. Concentration data is reported for the idle test. The 1975 Federal Test Procedure is considered as the primary standard. The sample was tested in two phases of the program. The first series of tests was conducted on the vehicles in the condition in which they were delivered to the laboratory (before). The second series of tests was conducted after maintenance and adjustments were performed (after). Table 6, 75 Car Sample Emission Data Before and After Maintenance, shows emission levels measured by each test procedure and indicated emission reduction. Data reported for Key Mode is composite data developed from multiple regression analysis. Mass emissions are indicated in grams per mile (g/m) for CO, HC, and NO_x. Emissions by concentration (conc) are in mole percent (%) for CO, and parts per million (ppm) for HC and NO_x. HC ppm is in terms of parts per million carbon as measured by a flame-ionization detector.

Test Procedure	Mean Emission Levels		Reduction	
	HC Before	HC After	Absolute	Percent
1975 FTP (Mass)	5.70g/m	4.82g/m	0.88g/m	15.44
Key Mode (Mass)	1.78g/m	1.51g/m	0.27g/m	15.17
Key Mode (Conc)	3474ppm	3048ppm	426ppm	12.30
Idle (Conc)	5493ppm	3788ppm	1705ppm	31.04
	CO Before	CO After		
1975 FTP (Mass)	71.79g/m	63.68g/m	8.10g/m	11.28
Key Mode (Mass)	22.16g/m	19.81g/m	2.35g/m	10.60
Key Mode (Conc)	1.92%	1.74%	0.18%	9.40
Idle (Conc)	3.51%	2.28%	1.23%	35.04
	NO_xBefore	NO_xAfter		
1975 FTP (Mass)	3.07g/m	3.03g/m	0.04g/m	1.30
Key Mode (Mass)	2.24g/m	2.16g/m	0.08g/m	3.57
Key Mode (Conc)	770ppm	766ppm	4ppm	0.05
Idle (Conc)	97ppm	131ppm	-34ppm	-35.05

Table 6, 75 Car Emission Data Before and After Maintenance

Analyses of Emission Data

Test data is presented in detail in the appendix to the study. A statistical analysis was performed relative to emission data on tests before maintenance and on tests after maintenance. Table 7, Analysis of 1975 FTP Emission Data, shows the results of that analysis. Acceptance limits were established at 99 percent for T-tests. On this basis, HC and CO emissions showed significant improvement after maintenance. NO_x remained unchanged. Appendix D shows a similar analysis of Key Mode Mass data, Key Mode Concentration data and Idle Concentration data. T-tests were not performed on Key Mode Mass, Key Mode Concentration and Idle Concentration data since 1975 FTP data is considered the standard.

Analysis	HC Before (g/m)	HC After (g/m)	Improvement (g/m)	Improvement (%)
Mean	5.70	4.82	0.88	15.40
Standard Deviation	3.88	2.39		
Maximum	30.14	17.02		
Minimum	1.59	1.33		
Range	28.55	15.69		
Computed T Value	-2.33			
Analysis	**CO Before (g/m)**	**CO After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	71.79	63.68	8.10	11.30
Standard Deviation	33.56	30.99		
Maximum	194.24	197.00		
Minimum	22.47	19.08		
Range	171.77	177.91		
Computed T Value	-3.67			
Analysis	**NO_x Before (g/m)**	**NO_x After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	3.07	3.03	0.04	1.30
Standard Deviation	1.09	1.00		
Maximum	6.60	5.50		
Minimum	1.23	1.42		
Range	5.37	4.09		
Computed T Value	-0.42			

For a decrease (single-ended test), $t_{0.99} = -2.326$

given d.f $= \infty$ (Reference 9)

Table 7, Analysis of 1975 FTP Emission Data

At this point it should be noted that the decrease in CO emission for the sample was not accompanied by an increase in NO_x emission as would normally be expected. A change in ignition timing is known to have significant effects on emissions of NO_x. It is believed that NO_x emissions did not significantly change partially due to this phenomenon. Maintenance organizations reported the practice of advancing ignition timing from specifications. In consideration of the potential significance of reported practices, engine data was examined and mean basic timing was found to be advanced 2.3 degrees from specifications. All vehicles were set to specifications prior to re-testing, or in effect were retarded a mean 2.3 degrees. Retarded ignition timing is known to reduce emissions of NO_x.

Good agreement (see Appendix D) is indicated between 1975 FTP data, Key Mode Mass data, and Key Mode Concentration data in terms of indicating improvement in emissions. In making this comparison, however, it should be remembered that composite Key Mode mass and concentration data were established by a best fit multiple regression analysis to 1975 FTP data. As furthur indicated by the above referenced tables, emission reduction predicted by idle concentration data relative to 1975 FTP results is relatively poor.

Identification of High Emitters, Inspection Correlations

One of the primary purposes of the study is to establish correlations between the 1975 Federal Test Procedure and Key Mode and Idle Inspection. Perhaps of equal importance is to determine the relative effectiveness of Key Mode and Idle inspection in identifying high emitters. It can be assumed that the better the correlation between 1975 FTP and an inspection procedure, the greater the ability of the inspection procedure to identify emissions at any level.

With respect to Key Mode data, two different regression analyses were performed for HC, CO and NO_x for both CKMC and CKMM. While details are given in Appendix B, the first regression analysis provided a least-squares fit of 1975 FTP data to the three modes of the Key Mode test. This analysis resulted in constants by which each mode was multiplied to obtain a Composite value for the Key Mode.

The actual Composite Key Mode values were computed using these constants. These composite values were then compared with 1975 FTP data using a second regression analysis. The results of this second analysis are presented in Table 8, 1975 FTP, and CKMC and IC Correlation. Although several correlations were determined and presented in the appendix, only CKMC and IC are presented here.

Analysis	Values					
	CKMC			IC		
	HC	CO	NO_x	HC	CO	NO_x
Intercept	-0.325	29.254	0.768	3.058	47.249	2.770
Regression Coefficient	0.002	21.050	0.003	0.000	7.068	0.002
Std Error of Reg Coef	0.000	1.566	0.000	0.000	0.966	0.009
Computed T-Value	20.480	13.445	15.531	11.520	7.320	2.657
Correlation Coefficient	0.860	0.742	0.787	0.688	0.516	0.213
Std Error of Estimate	1.661	21.846	0.645	2.362	27.900	1.022

Table 8, 1975 FTP, and CKMC and IC Correlation

The correlation coefficient is a statistical measurement which is computed from the correlations between pairs of values. For 1 to 1 correlation (that is, where each value of x predicts exactly the measured value of y, and that value of y predicts exactly the measured value of x), the value of the correlation coefficient equals one (R=1.000). If a value of x predicts a strange value of y and that value of y predicts a value of x which is radically different than the original x, then the value of the correlation coefficient would be close to zero (e.g. R=0.010). Correlation coefficients of less than 0.700 are often considered to be poor, with values nearer 1.00 considered to be better.

Emission data from all tests, both before and after maintenance were combined to determine correlations. Based on the analysis presented in Table 8, it can be seen that greater correlation exists between 1975 FTP and CKMC emissions for HC, CO and NO_x than between 1975 FTP and IC emissions. It can therefore be assumed that the ability of Composite Key Mode Concentration data to identify high emitters is greater than that of Idle Concentration. With emission data generated by this study, this assumption can be tested.

In order to empirically evaluate the ability of CKMC and IC to identify high HC and CO emissions, 1975 FTP results were sorted and identified by car number. Sorting was accomplished for both HC and CO from highest to lowest emissions.

From Table 9, Relative Ranking of Highest HC Emitting Vehicles, the effectiveness of CKMC and IC in identifying high HC emissions can be evaluated. Similarly, relative ability to identify highest CO emitting vehicles can be evaluated from Table 10. Ranking is from high to low as determined independently for HC and CO emissions as measured by the 1975 FTP.

	1975 FTP			CKMC		IC	
	Ranking	CarNo	HC(g/m)	Ranking	HC(ppmC)	Ranking	HC(ppmC)
	1	72	30.14	1	14,079	2	29,965
	2	51	16.52	2	9,255	8	23,638
|	3	*71	15.56	8	8,009	5	22,595
5%	4	6	12.13	7	7,350	1	17,589
	5	*68	12.02	5	7,206	7	17,206
	6	* 8	9.21	10	5,690	6	13,903
|	7	*11	8.95	3	5,493	x	11,331
10%	8	53	8.28	6	5,462	x	10,775
	9	32	7.97	x	4,456	10	10,775
	10	73	7.92	x	4,430	x	9,036
	11	*42	7.63	x	4,147	15	8,863
	12	49	6.74	14	4,114	x	8,689
	13	59	6.74	x	3,997	x	7,820
|	14	*63	6.66	12	3,973	3	7,681
20%	15	18	6.54	x	3,954	4	7,646

* vehicles in highest 20% CO also
x indicates greater than 15 in ranking

Table 9, Relative Ranking of Highest HC Emitting Vehicles

With reference to the ability of CKMC and IC to identify high emitters; for the highest emitters of HC at 20% rejection:

CKMC identified 10 of 15 vehicles by HC
IC identified 10 of 15 vehicles by HC

for the highest emitters of HC at 10% rejection:

CKMC identified 7 of 8 vehicles by HC
IC identified 6 of 8 vehicles by HC

for the highest emitters of HC at 5% rejection:

CKMC identified 2 of 4 vehicles by HC
IC identified 2 of 4 vehicles by HC

It should be noted that the correlation coefficient for IC versus 1975 FTP is relatively high for identification of HC emissions by Idle Concentration HC inspection. It would therefore be expected that emission identification by this procedure would be reasonably good.

	1975 FTP			CKMC		IC	
	Ranking	CarNo	CO(g/m)	Ranking	CO(mol%)	Ranking	CO(mol%)
	1	*71	194.2	3	5.54	14	8.47
	2	* 8	167.5	1	4.97	x	8.47
|	3	67	144.0	x	4.64	x	8.47
5%	4	58	125.9	x	4.63	8	8.47
	5	*42	121.4	7	4.60	2	8.37
	6	20	119.8	14	4.37	x	7.39
|	7	*63	110.3	2	3.90	x	7.13
10%	8	*68	109.8	13	3.38	x	7.07
	9	10	106.4	4	3.18	3	6.79
	10	12	105.2	x	3.18	x	6.41
	11	75	103.6	9	3.13	10	6.41
	12	37	103.0	6	2.88	x	6.30
	13	1	102.2	x	2.81	4	6.07
|	14	*11	100.7	8	2.79	9	5.93
20%	15	26	95.2	x	2.75	x	5.68

* vehicles in highest 20% HC also
x indicates greater than 15 in ranking

Table 10, Relative Ranking of Highest CO Emitting Vehicles

For the highest emitters of CO at 20% rejection:

CKMC identified 10 of 15 vehicles by CO
IC identified 7 of 15 vehicles by CO

for the highest emitters of CO at 10% rejection:

CKMC identified 4 of 8 vehicles by CO
IC identified 2 of 8 vehicles by CO

for the highest emitters of CO at 5% rejection:

CKMC identified 2 of 4 vehicles by CO
IC identified 0 of 4 vehicles by CO

The correlation coefficient is considerably lower for IC identification of CO emissions by CO inspection than for a similar identification by CKMC inspection. This is evidenced by the observation just described.

High HC emissions do not necessarily coincide with high CO emissions. However, six vehicles appear in the highest 20% by both HC and CO sorting. With reference to the appearance of the six vehicles in the highest 20% for both HC and CO ranked groups:

> CKMC identified the same 5 of 6 vehicles common to both groups, but failed to identify one as being in either group.
>
> IC identified the same 3 of 6 vehicles common to both groups, but failed to identify 3 by HC inspection and 2 by CO inspection as being in either group.

Therefore, based on correlation coefficient, the assumption that CKMC inspection has greater ability to identify high emitting vehicles than IC, is supported.

Emission Reduction by Rejection Rates

Rejection rates were established at 20, 30, and 40% levels for HC and CO from tests conducted before maintenance. Rejection rates were established for Composite Key Mode Concentration (CKMC) and Idle Concentration (IC) testing. Mean emission levels for the total sample were then determined for each rejection rate using 1975 FTP data as the standard measure. Reductions were computed assuming vehicles rejected were subjected to maintenance and remaining vehicles were not. Table 11, Mean 1975 FTP Emission Levels at 20, 30, and 40% Rejection Rates for CKMC, IC and 1975 FTP indicates emission levels by each procedure.

From data shown in Table 11, maximum reduction achieved for HC emissions is by 1975 FTP at the 40% HC rejection level. Idle Concentration (IC) appears to be next most effective at a 40% HC rejection rate.

With regard to CO, maximum reduction was achieved by IC at a 40% rejection rate, followed by the 1975 FTP at the 40% CO rejection rate.

Basis	Mean Emissions by 1975 FTP		
	HC(g/m)	CO(g/m)	NO_x(g/m)
1975 FTP (Before)	5.70	71.79	3.07
CKMC 20% HC Rejection	5.17	69.89	3.04
CKMC 30% HC Rejection	5.02	68.46	3.04
CKMC 40% HC Rejection	4.99	68.37	3.00
1975 FTP (Before)	5.70	71.79	3.07
CKMC 20% CO Rejection	5.46	69.30	3.08
CKMC 30% CO Rejection	5.46	67.87	3.10
CKMC 40% CO Rejection	5.35	66.71	3.07
1975 FTP (Before)	5.70	71.79	3.07
IC 20% HC Rejection	5.04	69.42	3.05
IC 30% HC Rejection	4.96	67.16	3.04
IC 40% HC Rejection	4.92	66.00	3.02
1975 FTP (Before)	5.70	71.79	3.07
IC 20% CO Rejection	5.44	66.92	3.04
IC 30% CO Rejection	5.28	64.89	3.01
IC 40% CO Rejection	4.88	64.48	2.99
1975 FTP (Before)	5.70	71.79	3.07
'75 FTP 20% HC Rejection	4.99	69.09	3.07
'75 FTP 30% HC Rejection	4.89	67.54	3.05
'75 FTP 40% HC Rejection	4.86	67.47	3.04
1975 FTP (Before)	5.70	71.79	3.07
'75 FTP 20% CO Rejection	5.46	67.25	3.08
'75 FTP 30% CO Rejection	5.35	65.61	3.13
'75 FTP 40% CO Rejection	4.94	64.88	3.11

Table 11, Mean 1975 FTP Emission Levels at 20, 30 and 40% Rejection Rates for CKMC, IC and 1975 FTP

Figure 7, 1975 FTP Hydrocarbon and Carbon Monoxide Levels Determined by HC and CO Rejection Rates, is a plot of data presented in Table 11. Figure 7 furthur illustrates that inspection by Idle Concentration is the more effective method of inspection in achieving reductions of both CO and HC.

It should be pointed out that emission reduction by emission inspection is a concept and not a means to achieve emission reduction in itself. Further, discussion relative to emission reduction by inspection is not intended to imply

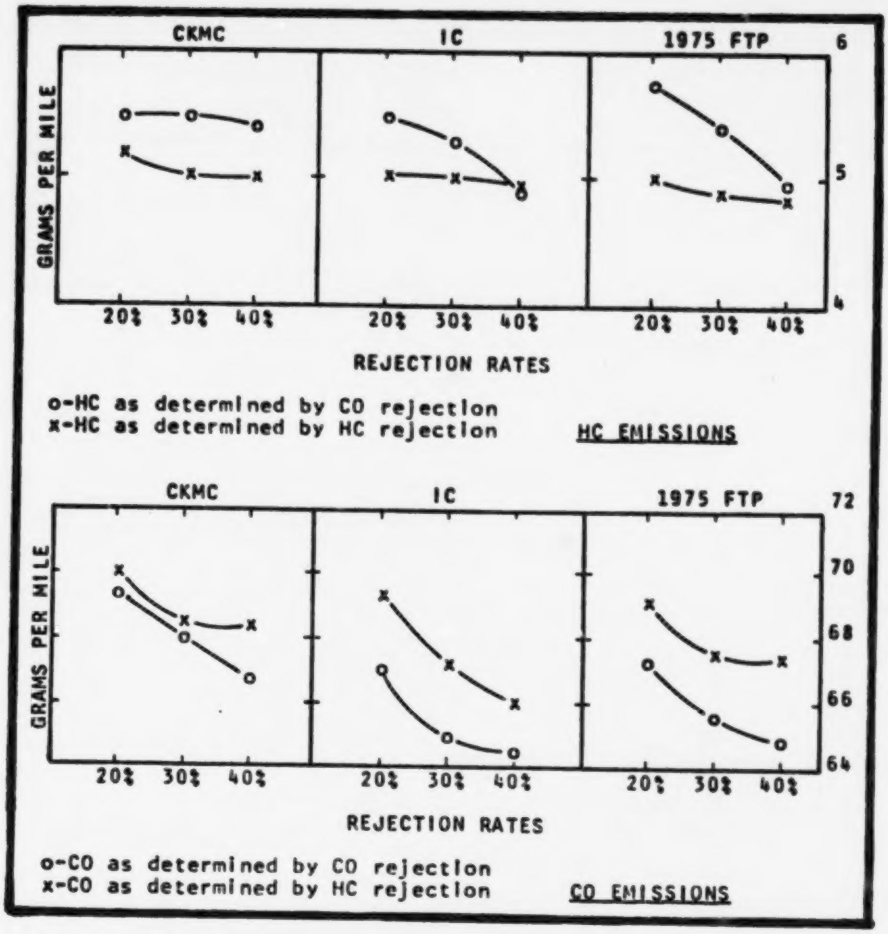


Figure 7, 1975 FTP Hydrocarbon and Carbon Monoxide Emissions Determined by HC and CO Rejection Rates that an effective inspection procedure is an effective diagnostic procedure. It should be remembered that engine diagnosis was accomplished by relatively extensive efforts. The inspection concept is intended to serve only as a means of rejecting high emitting vehicles and to indicate a requirement for corrective maintenance.

Cost Effectiveness

Cost effectiveness data is determined solely on the basis of reductions in grams per mile for HC and CO and direct maintenance cost. Costs of inspection equipment and diagnosis are not considered. Cost effectiveness is determined by the equation:

$$CE = \frac{\text{vehicle fraction rejected} \times \text{total reduction for fraction}}{\text{total costs for fraction}}$$

Cost effectiveness as determined from the equation was plotted for Composite Key Mode Concentration inspection by HC and CO rejection. Plots are shown in Appendix C. Table 12, Cost Effectiveness by Rejection Rates was derived from the plots and shows cost effectiveness at 10, 20, 30, 40 and 50% rejection rates.

Rejection Rate(%)	Cost Effectiveness by Rejection Basis							
	CKMC				IC			
	HC Rejection		CO Rejection		HC Rejection		CO Rejection	
	HC	CO	HC	CO	HC	CO	HC	CO
10	0.028	0.11	0.010	0.12	0.042	0.12	0.016	0.26
20	0.042	0.19	0.018	0.24	0.052	0.22	0.032	0.46
30	0.050	0.26	0.027	0.36	0.058	0.33	0.048	0.56
40	0.056	0.32	0.036	0.47	0.062	0.42	0.063	0.65
50	0.061	0.39	0.045	0.60	0.065	0.49	0.074	0.71

Table 12, Cost Effectiveness by Rejection Rates

From Table 12, it can be seen:

Inspection by CKMC and rejection by HC is more cost effective in reducing HC than inspection by CKMC and rejection by CO.

Inspection by CKMC and rejection by CO is more cost effective in reducing CO than inspection by CKMC and rejection by HC.

Inspection by IC and rejection by HC is more cost effective in reducing HC than inspection by IC and rejection by CO.

Inspection by IC and rejection by CO is more cost effective in reducing CO than inspection by IC and rejection by HC.

Further:

Inspection by IC and rejection by HC is more cost effective in reducing HC than inspection by CKMC and rejection by HC.

Inspection by IC and rejection by CO is more cost effective in reducing CO than inspection by CKMC and rejection by CO.

Therefore:

Inspection by IC is more cost effective.

The conclusion that inspection by IC is more cost effective than inspection by CKMC is based on the assumption that the emission reducing tactic to be employed is rejection of both HC and CO at equal rates. To more clearly demonstrate cost effectiveness differences which may be expected between IC and CKMC inspection and rejection, the following is presented:

At, say, a 20% rejection rate, IC by HC rejection is more cost effective in reducing HC than CKMC by a factor of 1.24

At a 20% rejection rate, IC by CO rejection is more cost effective in reducing HC than CKMC by a factor of 1.78

At a 20% rejection rate, IC by HC rejection is more cost effective in reducing CO than CKMC by a factor of 1.16

At a 20% rejection rate, IC by CO rejection is more cost effective in reducing CO than CKMC by a factor of 1.92

Rejection Rate (%)	Comparison Factors - CE IC/CE CKMC			
	HC Rejection		CO Rejection	
	HC	CO	HC	CO
10	1.50	1.09	1.60	2.17
20	1.24	1.16	1.78	1.92
30	1.16	1.27	1.78	1.56
40	1.11	1.32	1.75	1.38
50	1.07	1.26	1.64	1.18

Table 13, Cost Effectiveness Comparison of IC and CKMC Inspection and Rejection

Table 13, Cost Effectiveness Comparison of IC and CKMC Inspection and Rejection, shows the relative cost effectiveness benefit of IC inspection over CKMC inspection.

SECTION VIII

ACKNOWLEDGEMENTS

Mr. D. Douglas Graham of Spitzer Electrical Co. is acknowledged for his valuable assistance.

Clayton Manufacturing Company is acknowledged with respect for its efforts in the design of the key mode cycle.

The support of the program by the Environmental Protection Agency, Region VIII is acknowledged. A sincere thanks is especially directed to Mr. Dale Wells, Project Director, for his diligent efforts and valuable assistance.

A very special acknowledgement and thanks to the members of the staff of Automotive Testing Laboratories, Inc. for the expert and efficient manner in which they performed their assignments. Thanks to Mr. W.J. Becktel, Jr., Mr. A.J. Fugleberg, Mr. S.W. Sargent, and Ms. G.A. Cunningham.

SECTION VIII

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SECTION IX

GLOSSARY

Propane Recovery - A method of checking the constant volume sampler system whereby a known quantity of propane is released into the system and compared with the quantity of propane recovered in the sample bag.

Thermal Converter Efficiency - A method to determine the rate of conversion of NO to NO_x in the thermal converter of a chemiluminescent NO_x analyzer.

Coast Down Technique - A method to determine frictional power losses in a chassis dynamometer whereby actual loading can be more accurately calibrated.

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APPENDICES

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SECTION X

APPENDICES

Page

A Test Equipment 59

B Key Mode Regression Analysis and Scattergrams of Emission Inspection Correlations 61

- Tables 1 thru 12: Scattergrams, 1975 FTP vs CKMC, CKMM, IC, IM for HC, CO, NO_x 64
- Tables 13 thru 24: Scattergrams, Simulated Hot 1972 FTP vs CKMC, CKMM, IC, IM for HC, CO, NO_x 76
- Tables 25 thru 27: Scattergrams, CKMC vs CKMM for HC, CO, NO_x 88

C Maintenance and Cost Data 91

- Tables 1A thru 1G: Sample Maintenance and Costs 95
- Tables 2 thru 9 : Cost Effectiveness Plots 102

D Test Sample and Emission Test Data 111

- Tables 1A thru 1C: Test Sample as Equipped 114
- Tables 2 thru 4 : Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance 117
- Tables 5A thru 5B: Emission Data by Car by 1975 FTP 120
- Tables 6A thru 6B: Emission Data by Car by CKMC 122
- Tables 7A thru 7B: Emission Data by Car by CKMM 124
- Tables 8A thru 8B: Emission Data by Car by IC 126
- Tables 9A thru 9D: Analysis of Emission Data 128

Detailed Emission Data 132

E Predicted 1955 through 1972 Model Passenger Cars in Colorado 283

- Table 1: Cars in Operation in 1972 284
- Table 2: Cars in Operation in 1973 285

Preceding page blank

Page

Table 3: Cars in Operation in 1974 286
Table 4: Cars in Operation in 1975 287

Detailed Registration Data 288

APPENDIX A

TEST EQUIPMENT

Test results for the study were based on inferences from electronic and mechanical test equipment and instrumentation. The overall accuracy of the study is therefore limited by design, quality and calibration of test equipment. In the design of this study, the Federal Register was considered to be the standard by which testing techniques and quality and accuracy of instrumentation were established. In order that test results may be clearly understood, the following list of equipment used in the conduct of the study is provided.

Test Equipment

Clayton Chassis Dynamometer, Model CT-200, with variable inertia flywheel assembly and low torque bridge and power meter

Marquette Engine Diagnosis Console, Model M-200

Automotive Environmental Systems, Inc. Constant Volume Sampler

Beckman Instruments, Model 315A, Carbon Monoxide and Carbon Dioxide Analyzers

Beckman Instruments, Model 400, Hydrocarbon Flame-Ionization Detector

Thermo-Electron, Chemiluminescent NO, NO_x Analyzer

Texas Instruments, Inc., Servo-Riter II Strip Chart Recorders

Calibration Gas Standards analyzed by the Environmental Protection Agency, Office of Air Programs

APPENDIX B

KEY MODE REGRESSION ANALYSIS AND SCATTERGRAMS OF EMISSION INSPECTION CORRELATIONS

The Key Mode test as run for this program resulted in six values each for emissions of HC, CO and NO_x:

1. High Cruise Concentration
2. High Cruise Mass (gm/mi)
3. Low Cruise Concentration
4. Low Cruise Mass (gm/mi)
5. Idle Concentration
6. Idle Mass (gm/min)

It was apparent that these results should be combined to comprise two composite results from the Key Mode...one for concentration and one for mass. We elected to perform a multiple regression analysis upon the data to determine a least-squares best fit for emission results from the 1975 Federal Test Procedure. The following results were obtained:

CONCENTRATION

Hydrocarbons

$$\text{Composite} = -0.30931 + 0.00121\ (\text{Hi. Cr.}) + 0.00018\ (\text{Lo. Cr.}) + 0.00031\ (\text{Idle})$$

Carbon Monoxide

$$\text{Composite} = 28.8 + 13.02\ (\text{Hi. Cr.}) + 2.14\ (\text{Lo. Cr.}) + 4.58\ (\text{Idle})$$

Oxides of Nitrogen

$$\text{Composite} = 0.752 + 0.00055\ (\text{Hi. Cr.}) + 0.00081\ (\text{Lo. Cr.}) + 0.00158\ (\text{Idle})$$

MASS

Hydrocarbons

$$\text{Composite} = 1.247 + 0.657\ (\text{Hi. Cr.}) + 0.217\ (\text{Lo. Cr.}) + 1.567\ (\text{Idle})$$

Carbon Monoxide

$$\text{Composite} = 23.7 + 0.527\ (\text{Hi. Cr.}) + 0.230\ (\text{Lo. Cr.}) + 1.342\ (\text{Idle})$$

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Oxides of Nitrogen
Composite = 0.789 + 0.235 (Hi. Cr.) + 0.173 (Lo. Cr.)

+ 0.623 (Idle)

We derived a great deal of satisfaction when by these operations, the following correlation coefficients were obtained:

CONCENTRATION

Hydrocarbons R = 0.860
Carbon Monoxide R = 0.743
Oxides of Nitrogen R = 0.788

MASS

Hydrocarbons R = 0.891
Carbon Monoxide R = 0.815
Oxides of Nitrogen R = 0.824

We felt that the composites obtained by this method were difficult to visualize for two reasons: 1.) The concentration data has values which look like mass data, and 2.) The mass data has multipliers and constants which result i[illegible]rs that don't look like "averages."

We elected to change the factors of the equations such that the sum of the multipliers would be 1.000 This would result in composite concentration values that look like concentrations and both sets of data would look more like "averages. The resulting equations:

CONCENTRATION

Hydrocarbons
Composite = 0.712 (Hi. Cr.) + 0.106 (Lo. Cr.)

+ 0.182 (Idle)

Carbon Monoxide
Composite = 0.659 (Hi. Cr.) + 0.109 (Lo. Cr.)

+ 0.232 (Idle)

Oxides of Nitrogen
Composite = 0.187 (Hi. Cr.) + 0.276 (Lo. Cr.)

+ 0.537 (Idle)

MASS

Hydrocarbons
Composite = 0.269 (Hi. Cr.) + 0.089 (Lo. Cr.)

+ 0.642 (Idle)

Carbon Monoxide
Composite = 0.251 (Hi. Cr.) + 0.110 (Lo. Cr.)

+ 0.639 (Idle)

Oxides of Nitrogen
Composite = 0.228 (Hi. Cr.) + 0.169 (Lo. Cr.)

+ 0.603 (Idle)

were used to compute the composite figures in the program. Thus, the value presented for hydrocarbon CKMC is the value computed by the first equation following the word CONCENTRATION in the above set, and the oxides of nitrogen value for CKMM is found using the last equation presented immediately above.

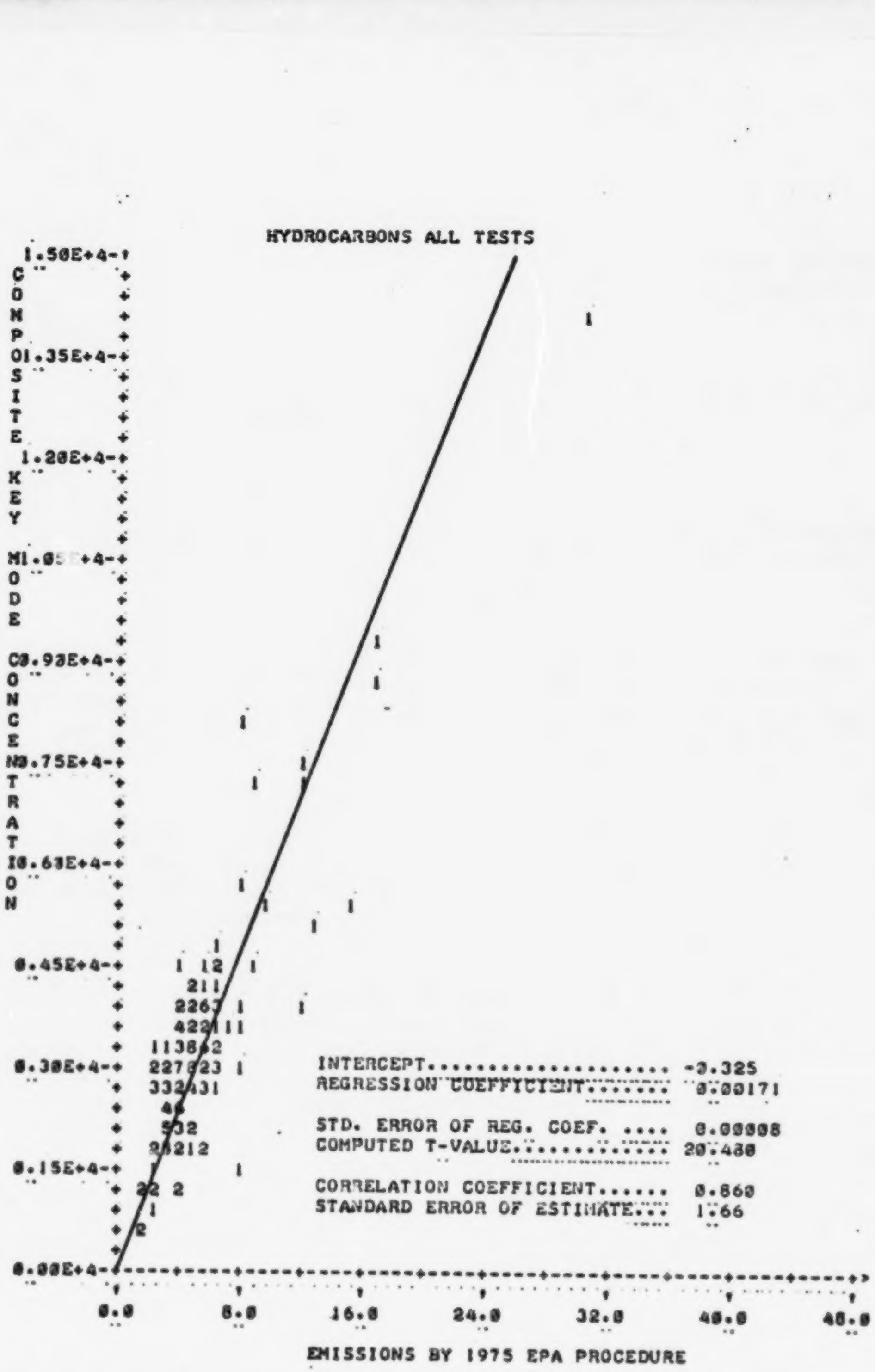
The following pages of this appendix present scattergrams of emission data measured by two different methods. The intent of this work is to present data in a format such that the reader can visually inspect relationships existing between emission test results.

For the data in which one axis is 1975 EPA Test Procedure, a "line of best fit" has been shown, and mathematical information concerning that line is included on the scattergram. This line represents 1975 EPA Test Procedure values which would be predicted from the other variable. The equation represented by the line is one of the following family:

'75 EPA Value = Intercept + Reg. Coef. X (Value of

other variable)

Statistical information concerning the Standard Errror of an Estimate, the Standard Error of the Regression Coefficient, a computed value for T (with 74 Degrees of Freedom) and the Correlation Coefficient is also presented.



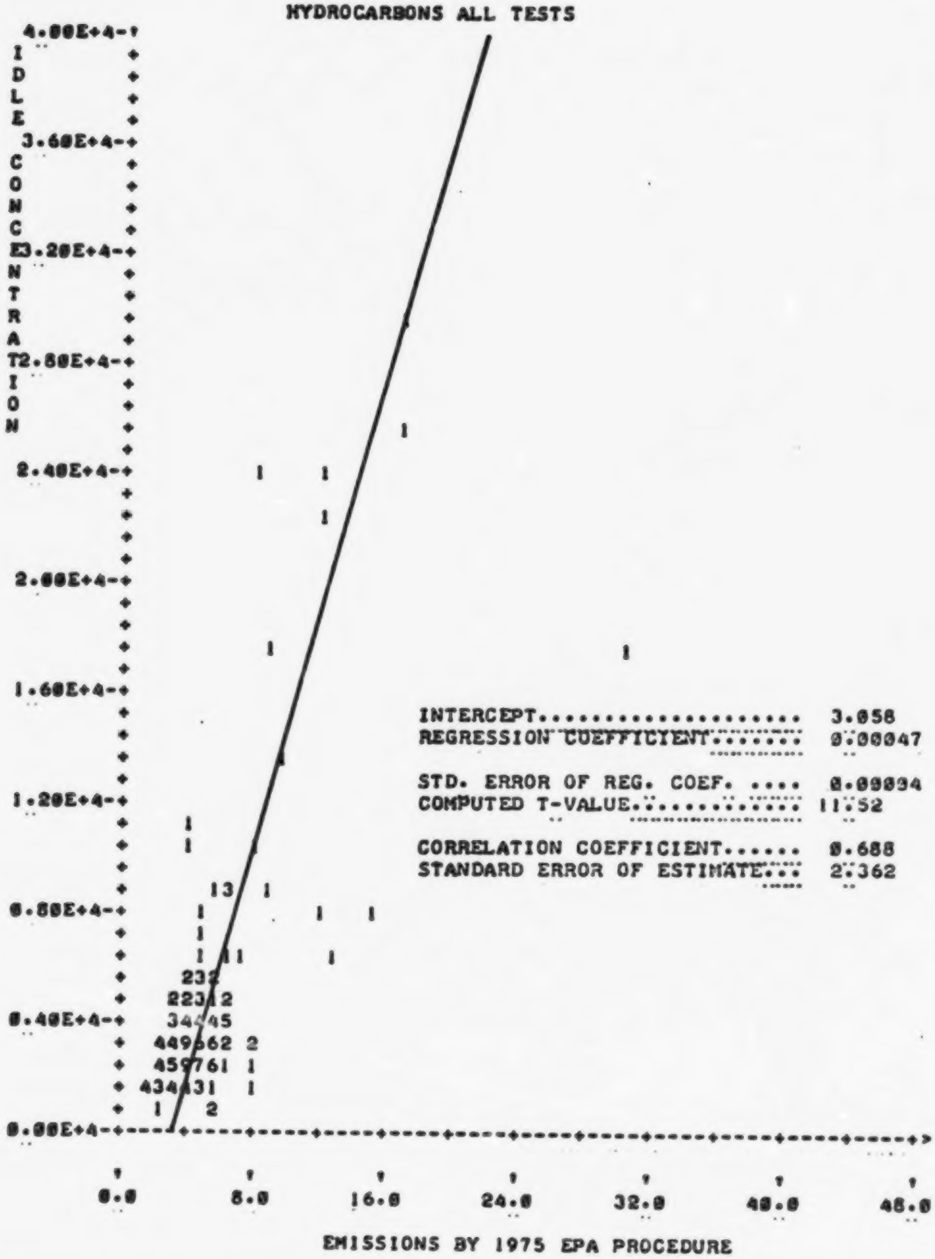
```
INTERCEPT....................... -0.325
REGRESSION COEFFICIENT.......... 0.00171

STD. ERROR OF REG. COEF. ....  0.00008
COMPUTED T-VALUE............ 20.480

CORRELATION COEFFICIENT......  0.860
STANDARD ERROR OF ESTIMATE...  1.66
```

```
LEGEND:  DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
         DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
         IS PRINTED.
                 AUTOMOTIVE TESTING LABORATORIES, INC.
                19900 E. COLFAX, AURORA, COLORADO 80011
```

Table 1, Scattergram, 1975 FTP vs CKMC for HC



```
INTERCEPT.....................  3.058
REGRESSION COEFFICIENT........  0.00047

STD. ERROR OF REG. COEF. ....  0.00004
COMPUTED T-VALUE.............  11.52

CORRELATION COEFFICIENT......  0.688
STANDARD ERROR OF ESTIMATE...  2.362
```

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LEGEND:  DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
         DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
         IS PRINTED.
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               19900 E. COLFAX, AURORA, COLORADO 80011
```
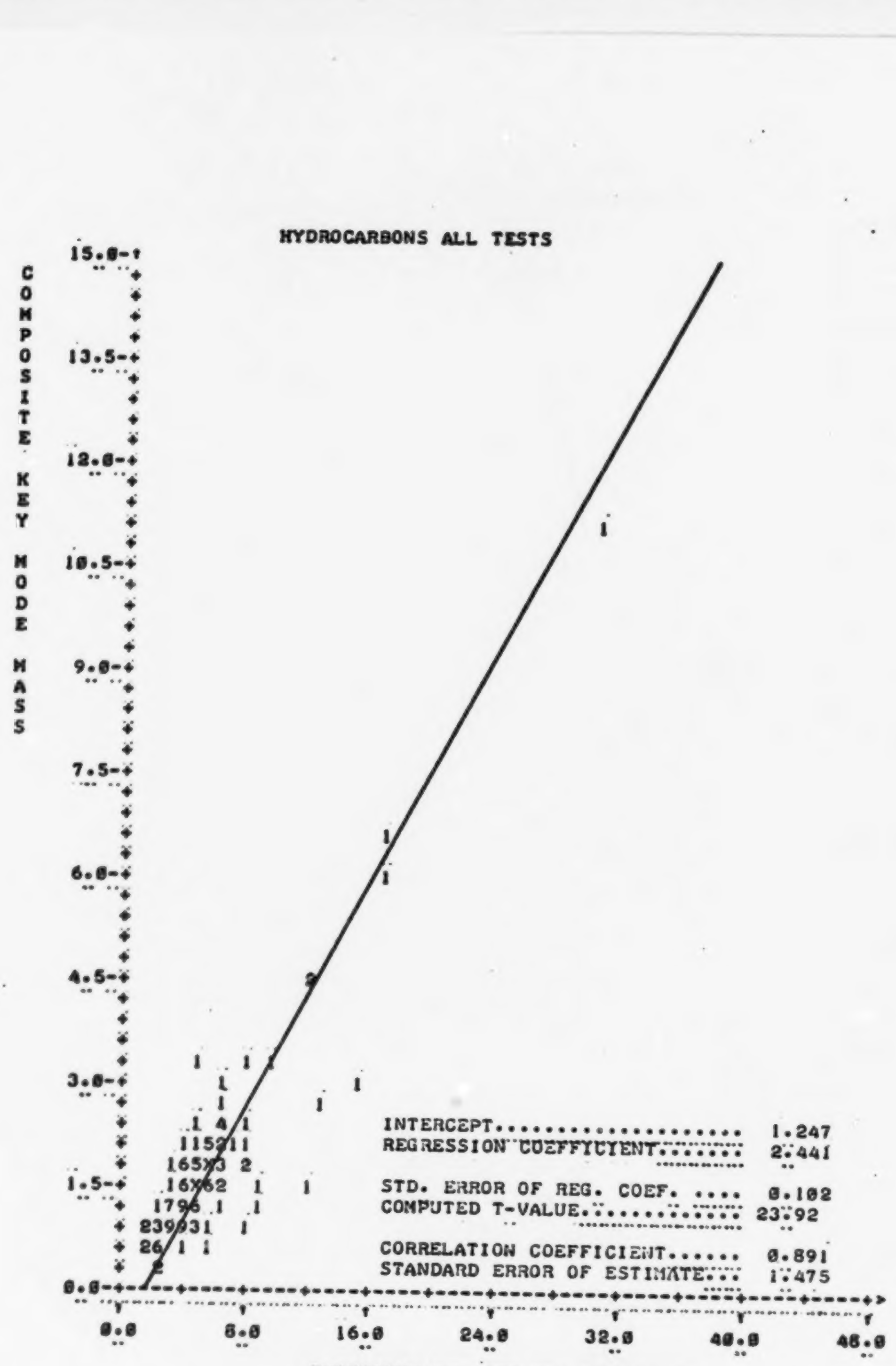
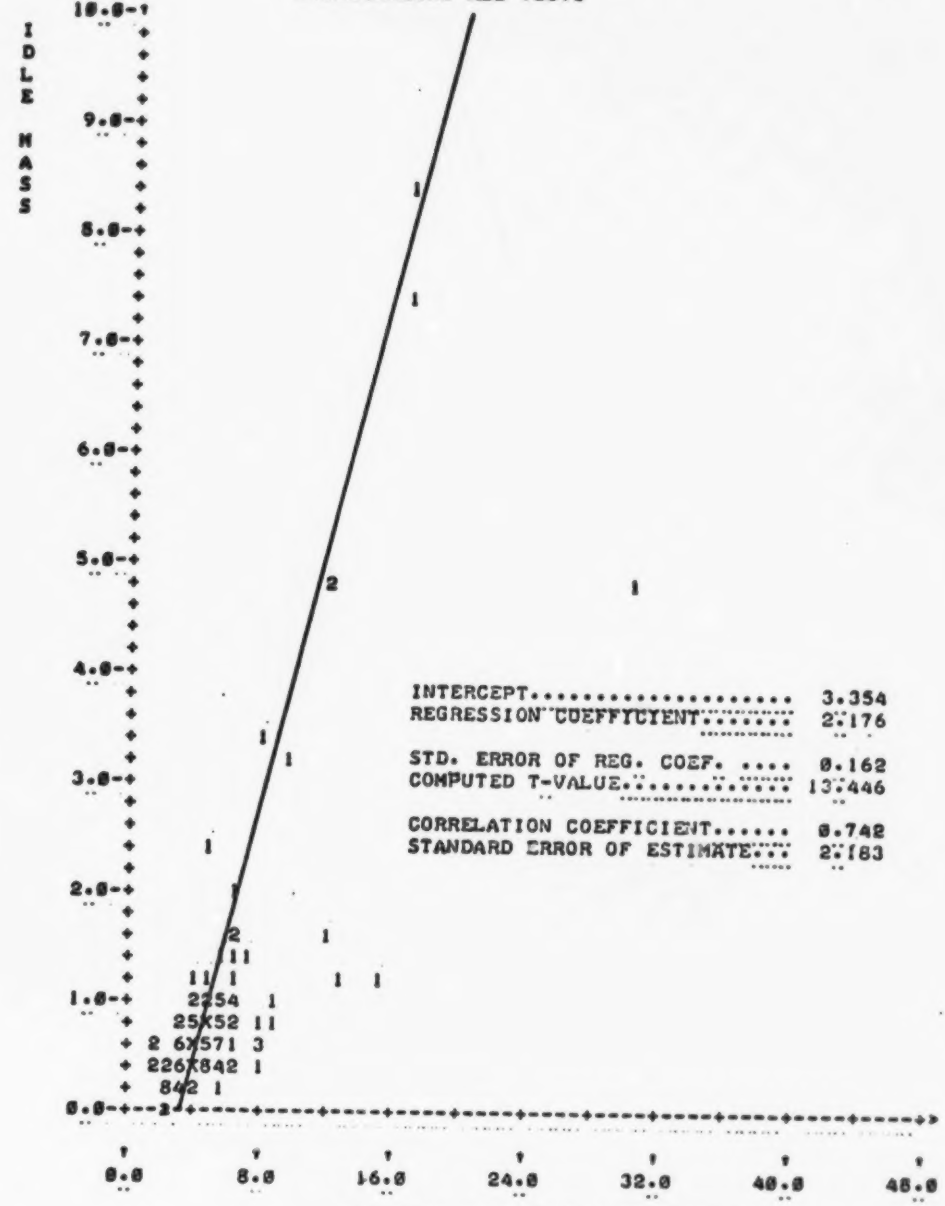

Table 2, Scattergram, 1975 FTP vs IC for HC



```
INTERCEPT....................  1.247
REGRESSION COEFFICIENT.......  2.441

STD. ERROR OF REG. COEF. ....  0.102
COMPUTED T-VALUE............. 23.92

CORRELATION COEFFICIENT......  0.891
STANDARD ERROR OF ESTIMATE...  1.475
```

```
LEGEND:  DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
         DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
         IS PRINTED.
                AUTOMOTIVE TESTING LABORATORIES, INC.
                19900 E. COLFAX, AURORA, COLORADO 80011
```

Table 3, Scattergram, 1975 FTP vs CKMM for HC



INTERCEPT.....................	3.354
REGRESSION COEFFICIENT........	2.176
STD. ERROR OF REG. COEF.	0.162
COMPUTED T-VALUE..............	13.446
CORRELATION COEFFICIENT.......	0.742
STANDARD ERROR OF ESTIMATE....	2.183

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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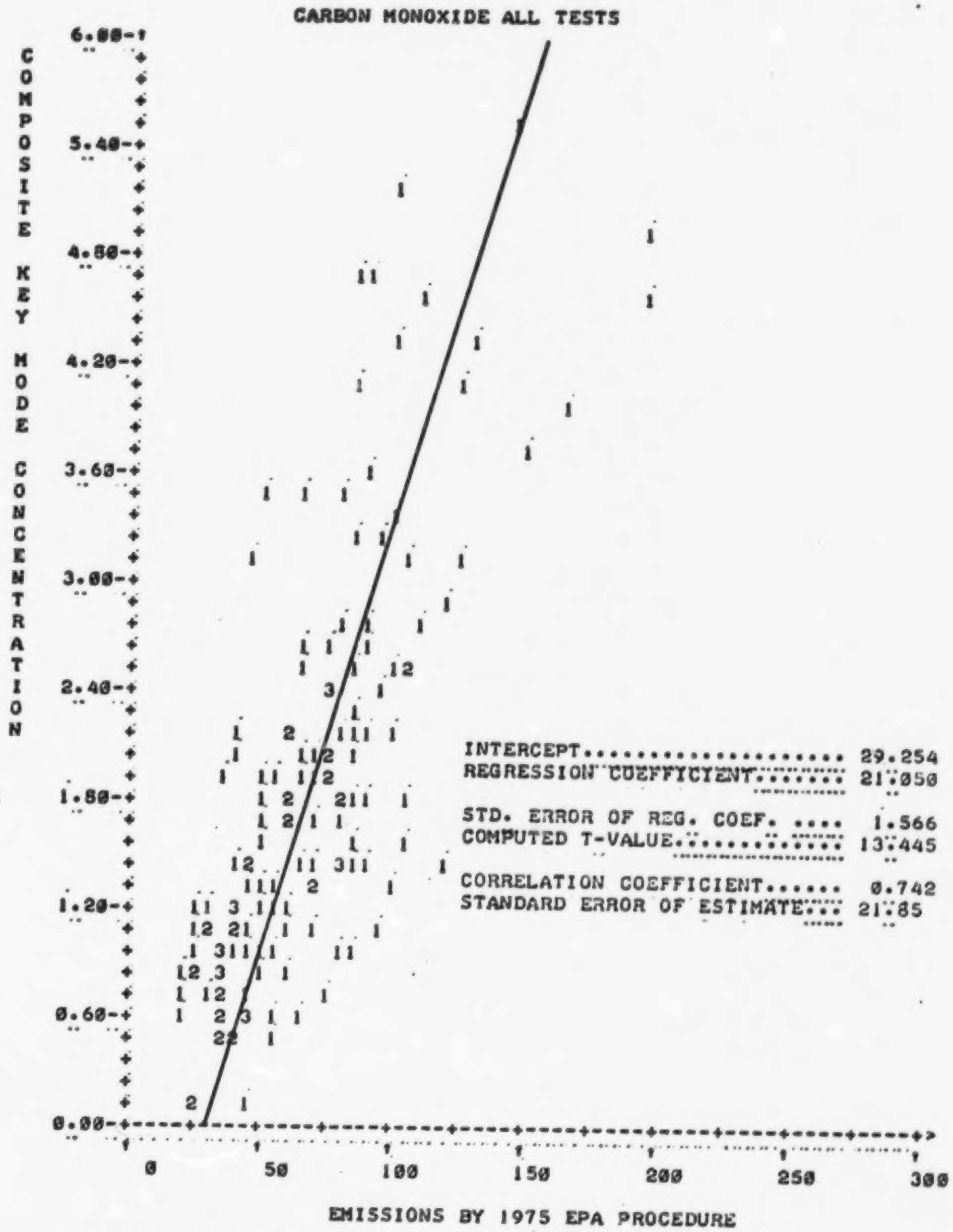
Table 4, Scattergram, 1975 FTP vs IM for HC



```
INTERCEPT.....................  29.254
REGRESSION COEFFICIENT........  21.050

STD. ERROR OF REG. COEF. ....   1.566
COMPUTED T-VALUE..............  13.445

CORRELATION COEFFICIENT......   0.742
STANDARD ERROR OF ESTIMATE...   21.85
```

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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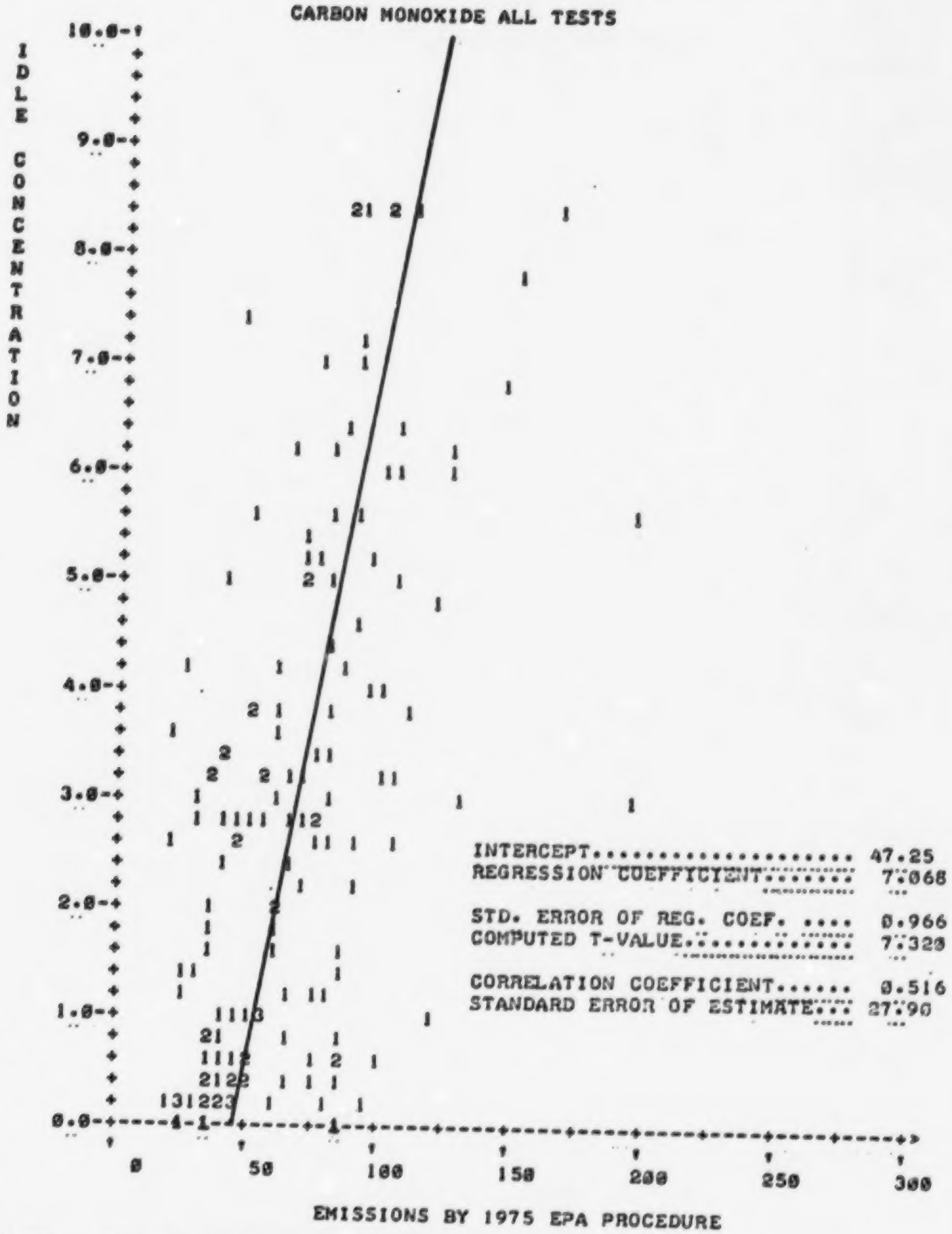
Table 5, Scattergram, 1975 FTP vs CKMC for CO



```
INTERCEPT.......................  47.25
REGRESSION COEFFICIENT.........   7.068

STD. ERROR OF REG. COEF. ....     0.966
COMPUTED T-VALUE..............    7.320

CORRELATION COEFFICIENT......     0.516
STANDARD ERROR OF ESTIMATE...    27.90
```

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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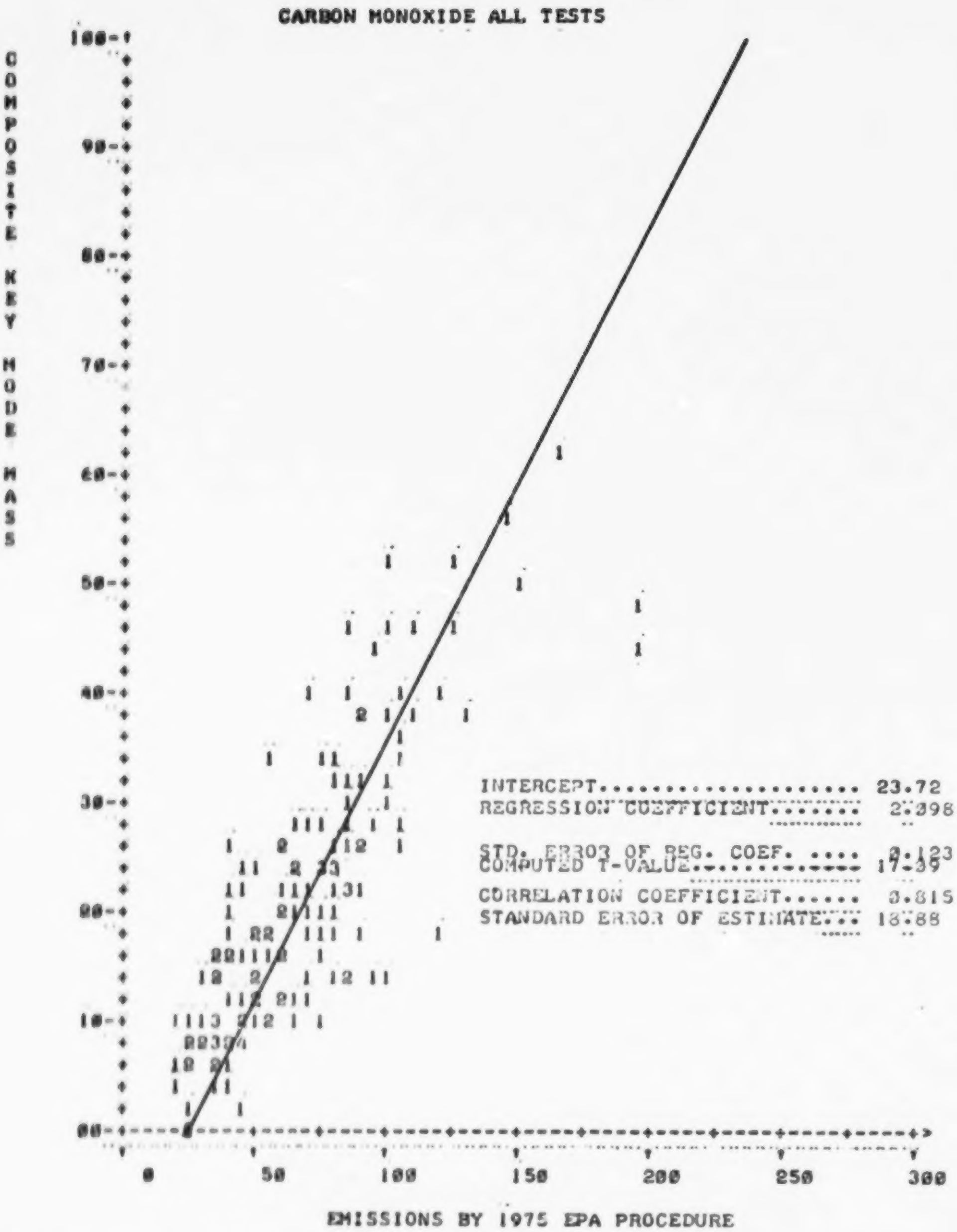
Table 6, Scattergram, 1975 FTP vs IC for CO



```
INTERCEPT.....................  23.72
REGRESSION COEFFICIENT........   2.398

STD. ERROR OF REG. COEF. .....   0.123
COMPUTED T-VALUE..............  17.39

CORRELATION COEFFICIENT.......   0.815
STANDARD ERROR OF ESTIMATE....  18.88
```

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X'
IS PRINTED.

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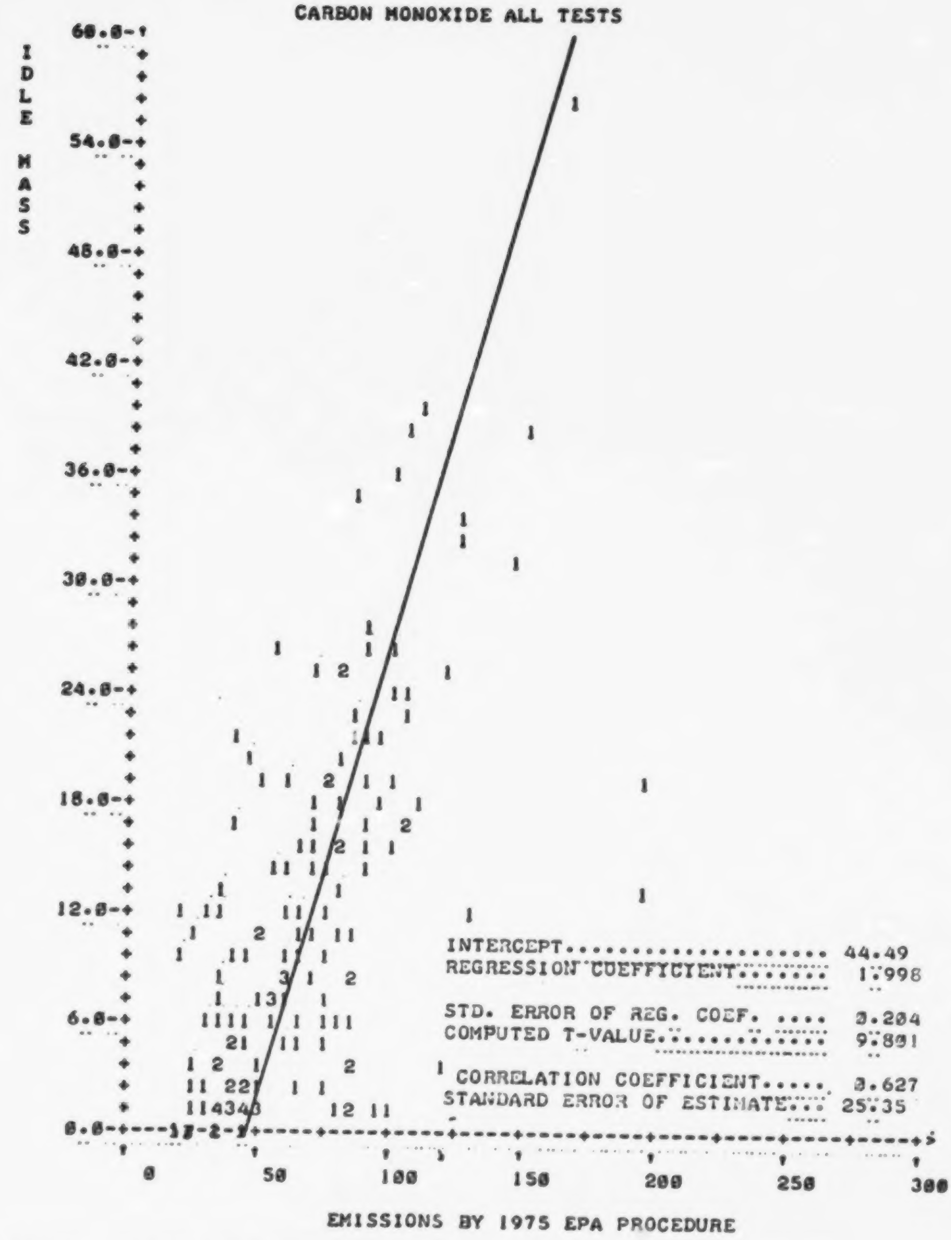
Table 7, Scattergram, 1975 FTP vs CKMM for CO



```
INTERCEPT..................... 44.49
REGRESSION COEFFICIENT........  1.998

STD. ERROR OF REG. COEF. ....  0.204
COMPUTED T-VALUE.............  9.801

 CORRELATION COEFFICIENT.....  0.627
STANDARD ERROR OF ESTIMATE... 25.35
```

```
LEGEND:  DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
         DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
         IS PRINTED.
              AUTOMOTIVE TESTING LABORATORIES, INC.
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```
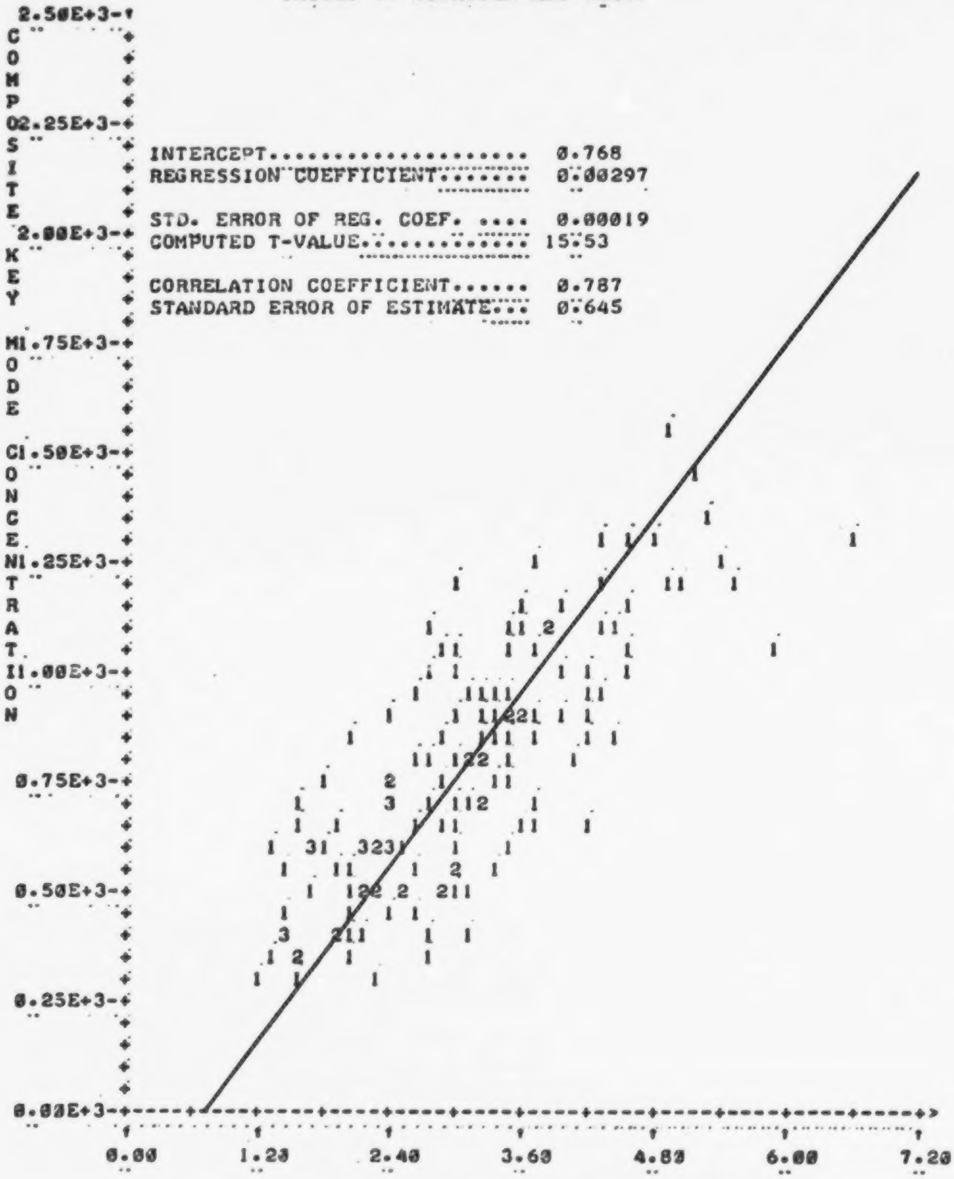

Table 8, Scattergram, 1975 FTP vs IM for CO

OXIDES OF NITROGEN ALL TESTS



INTERCEPT....................	0.768
REGRESSION COEFFICIENT........	0.00297
STD. ERROR OF REG. COEF.	0.00019
COMPUTED T-VALUE............	15.53
CORRELATION COEFFICIENT......	0.787
STANDARD ERROR OF ESTIMATE...	0.645

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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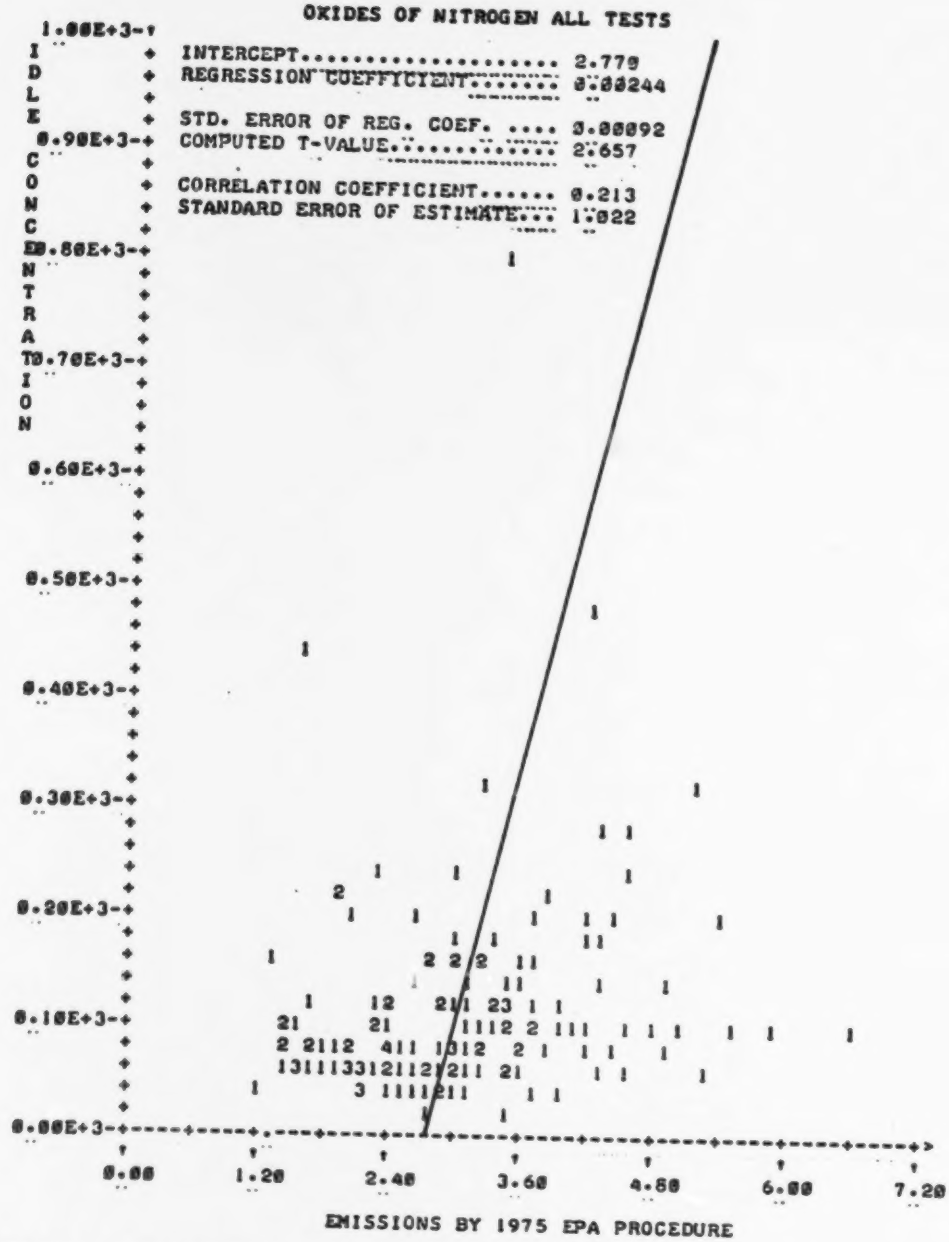
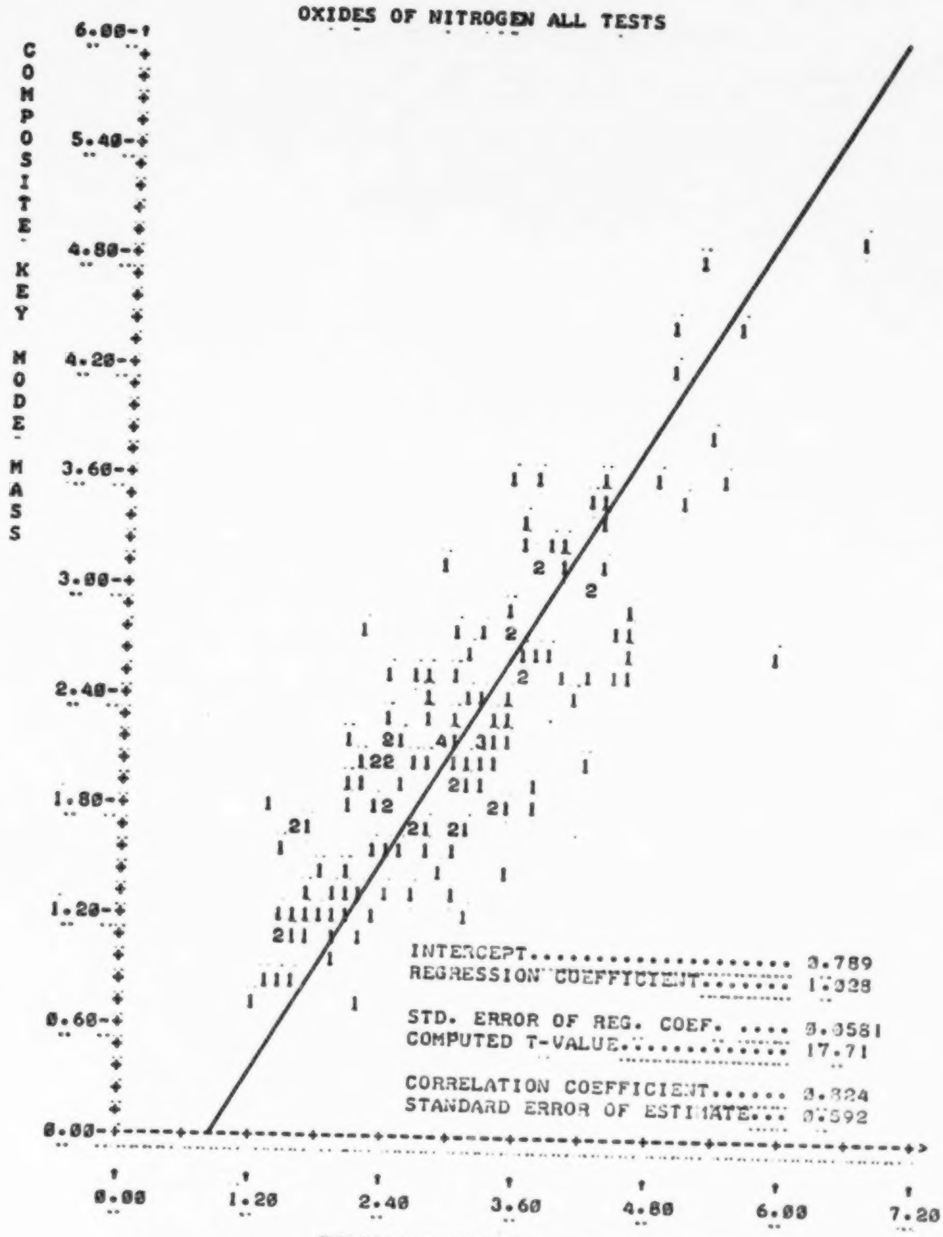
Table 9, Scattergram, 1975 FTP vs CKMC for NO_x



```
OXIDES OF NITROGEN ALL TESTS

INTERCEPT....................... 2.779
REGRESSION COEFFICIENT.......... 0.00244

STD. ERROR OF REG. COEF. ....... 0.00092
COMPUTED T-VALUE................ 2.657

CORRELATION COEFFICIENT......... 0.213
STANDARD ERROR OF ESTIMATE...... 1.022

EMISSIONS BY 1975 EPA PROCEDURE

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
        DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
        IS PRINTED.
              AUTOMOTIVE TESTING LABORATORIES, INC.
             19900 E. COLFAX, AURORA, COLORADO 80011
```

Table 10, Scattergram, 1975 FTP vs IC for NO_x



```
INTERCEPT.................... 0.789
REGRESSION COEFFICIENT....... 1.028

STD. ERROR OF REG. COEF. .... 0.0581
COMPUTED T-VALUE............. 17.71

CORRELATION COEFFICIENT...... 0.824
STANDARD ERROR OF ESTIMATE... 0.592
```

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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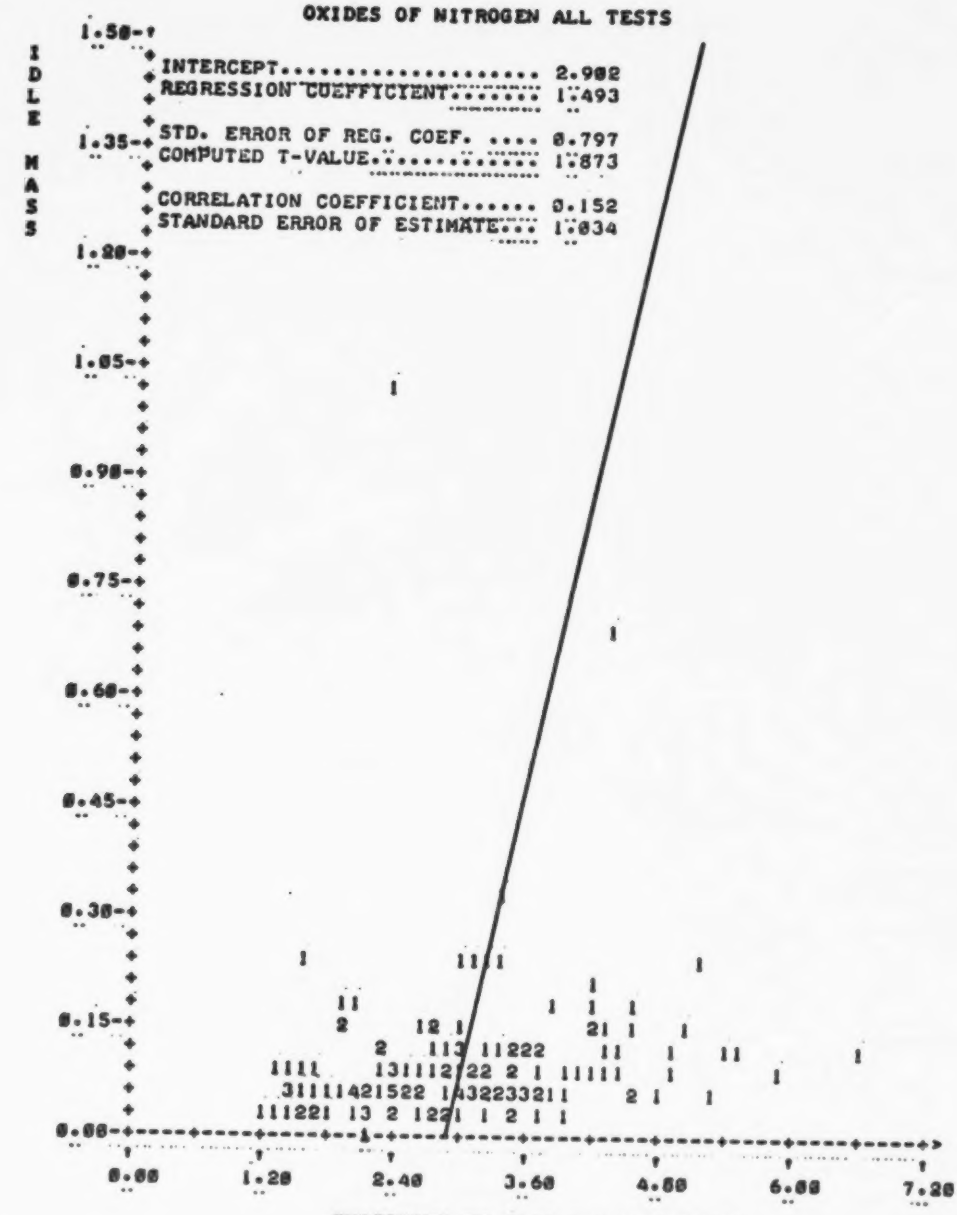
Table 11, Scattergram, 1975 FTP vs CKMM for NO_x



```
INTERCEPT.................... 2.902
REGRESSION COEFFICIENT....... 1.493

STD. ERROR OF REG. COEF. .... 0.797
COMPUTED T-VALUE............. 1.873

CORRELATION COEFFICIENT...... 0.152
STANDARD ERROR OF ESTIMATE... 1.034
```

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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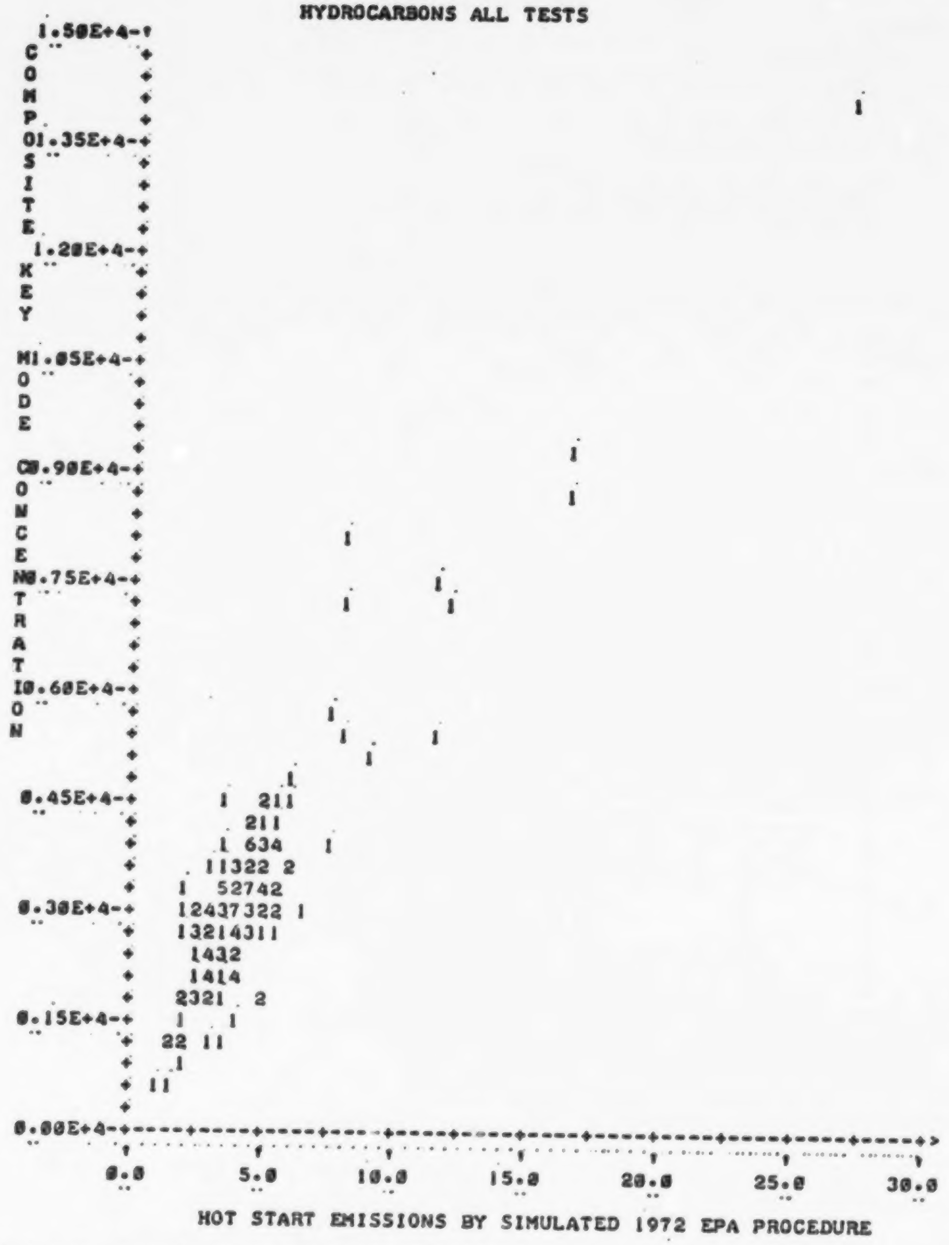
Table 12, Scattergram, 1975 FTP vs IM for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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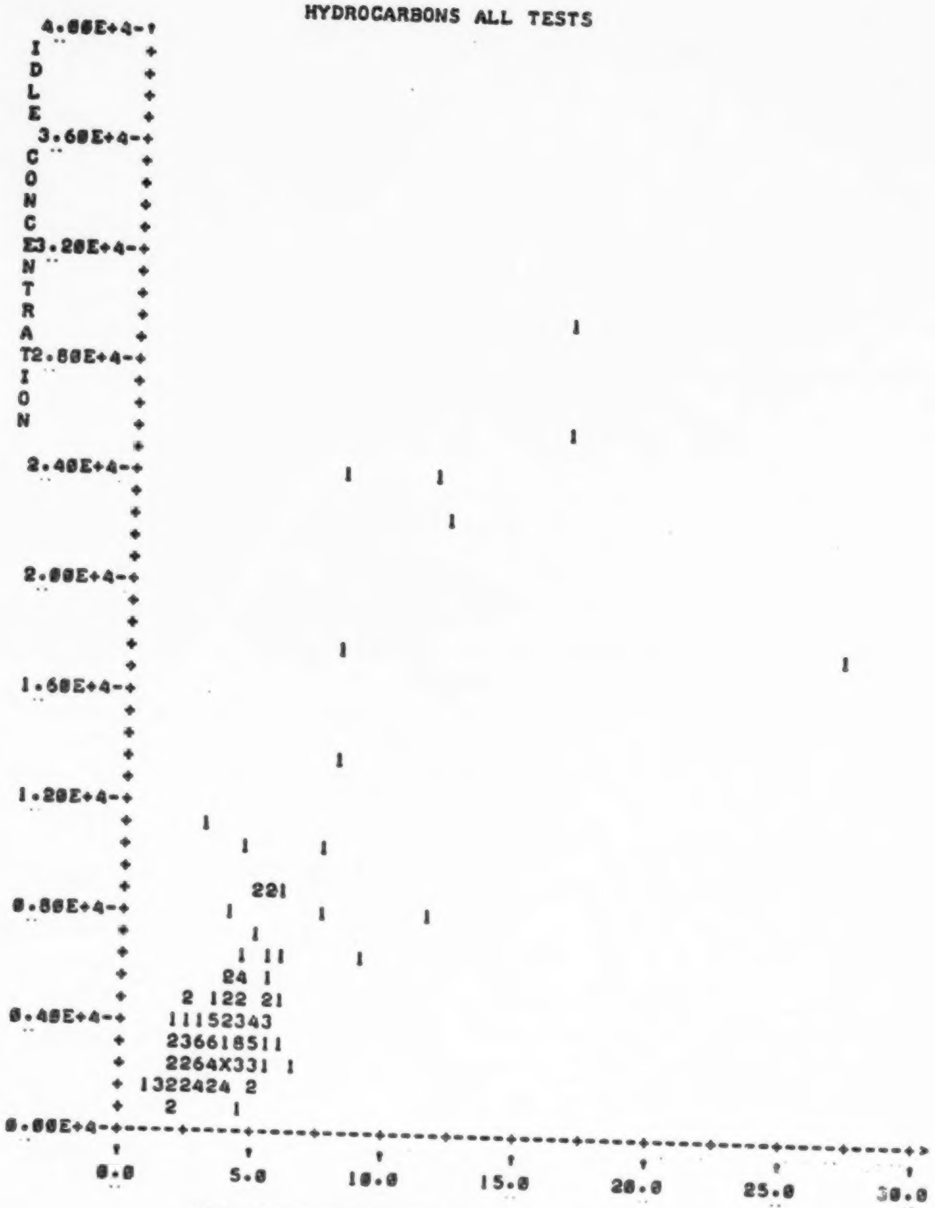
Table 13
Scattergram, Simulated Hot, 1972 FTP vs CKMC for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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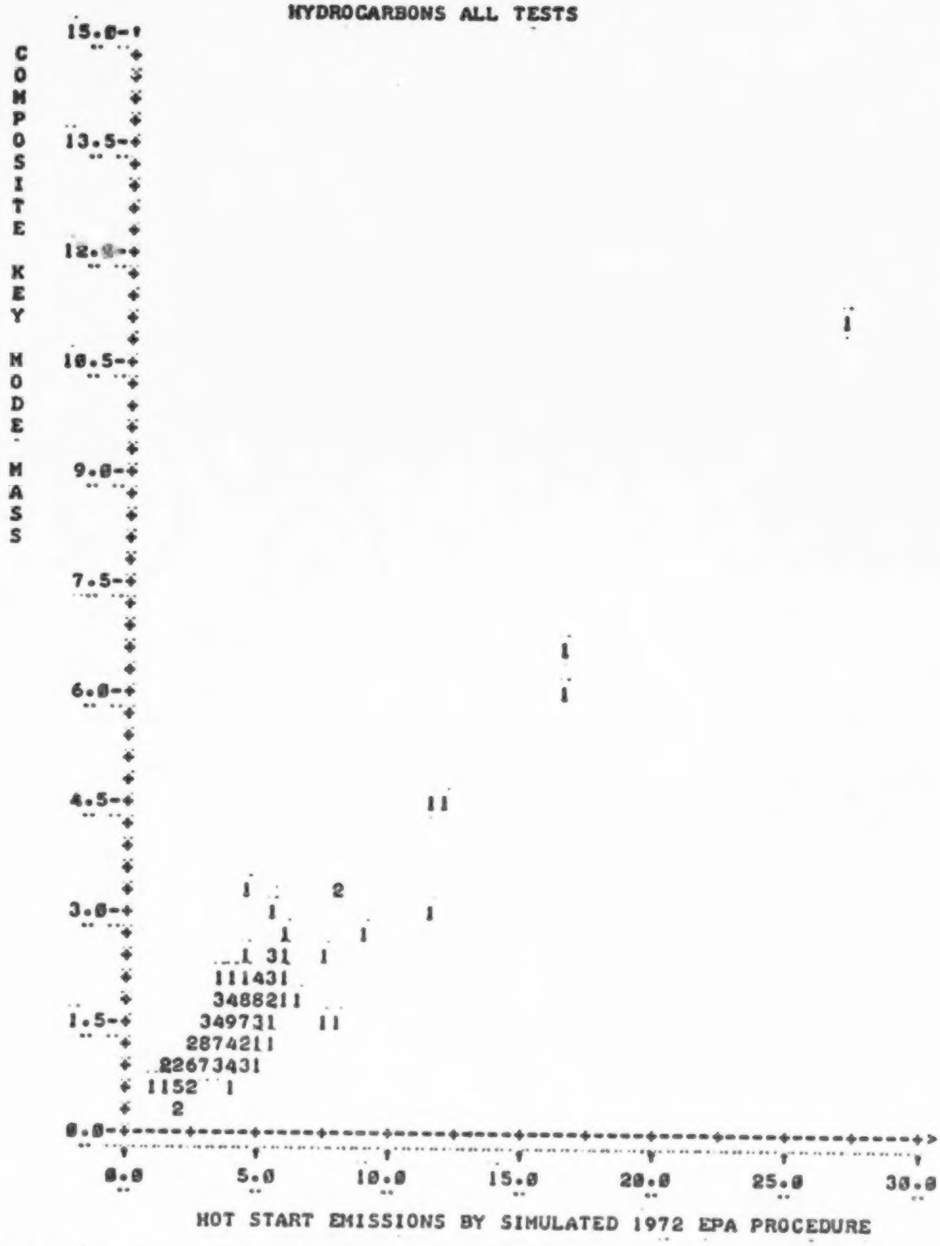
Table 14
Scattergram, Simulated Hot, 1972 FTP vs IC for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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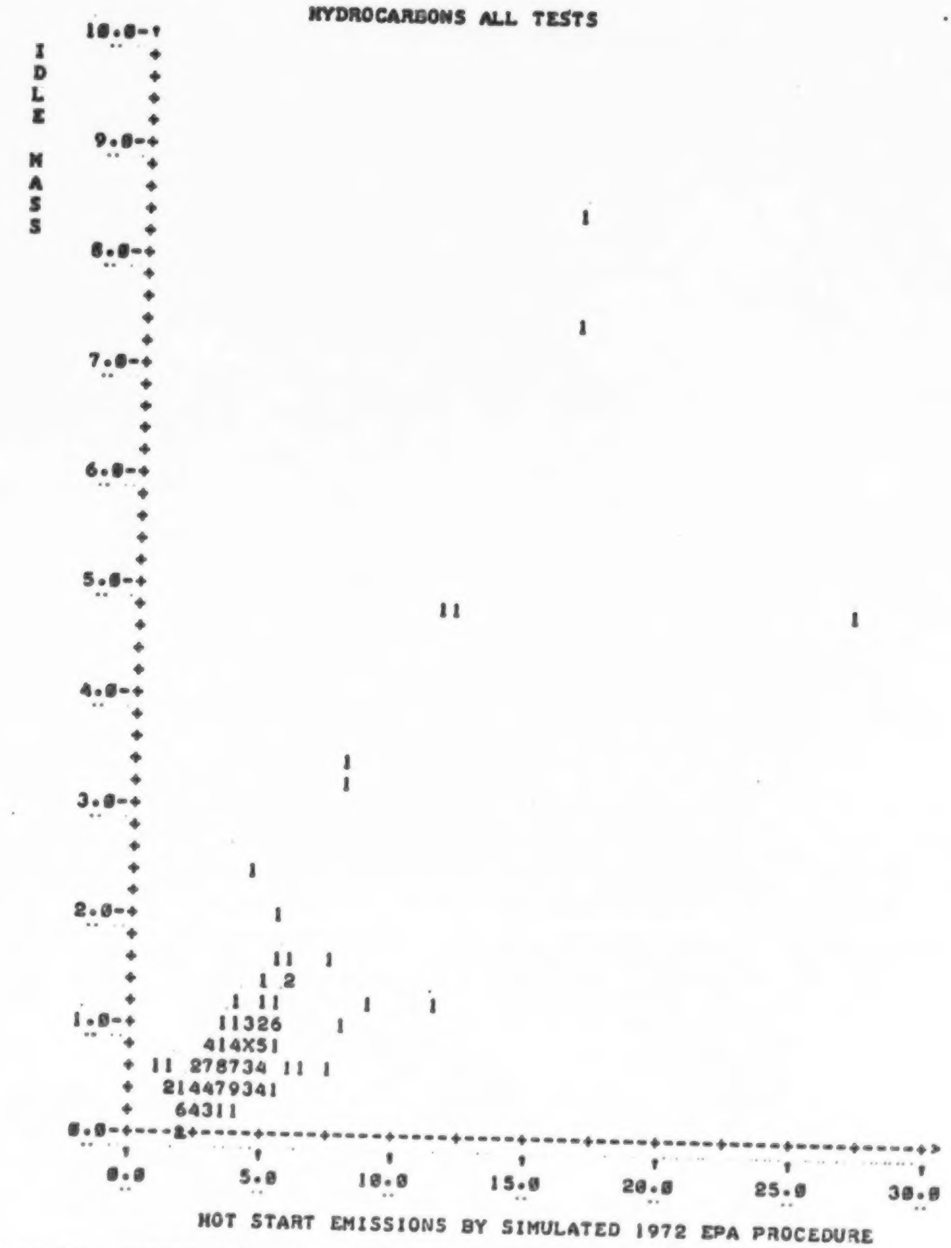
Table 15
Scattergram, Simulated Hot, 1972 FTP vs CKMM for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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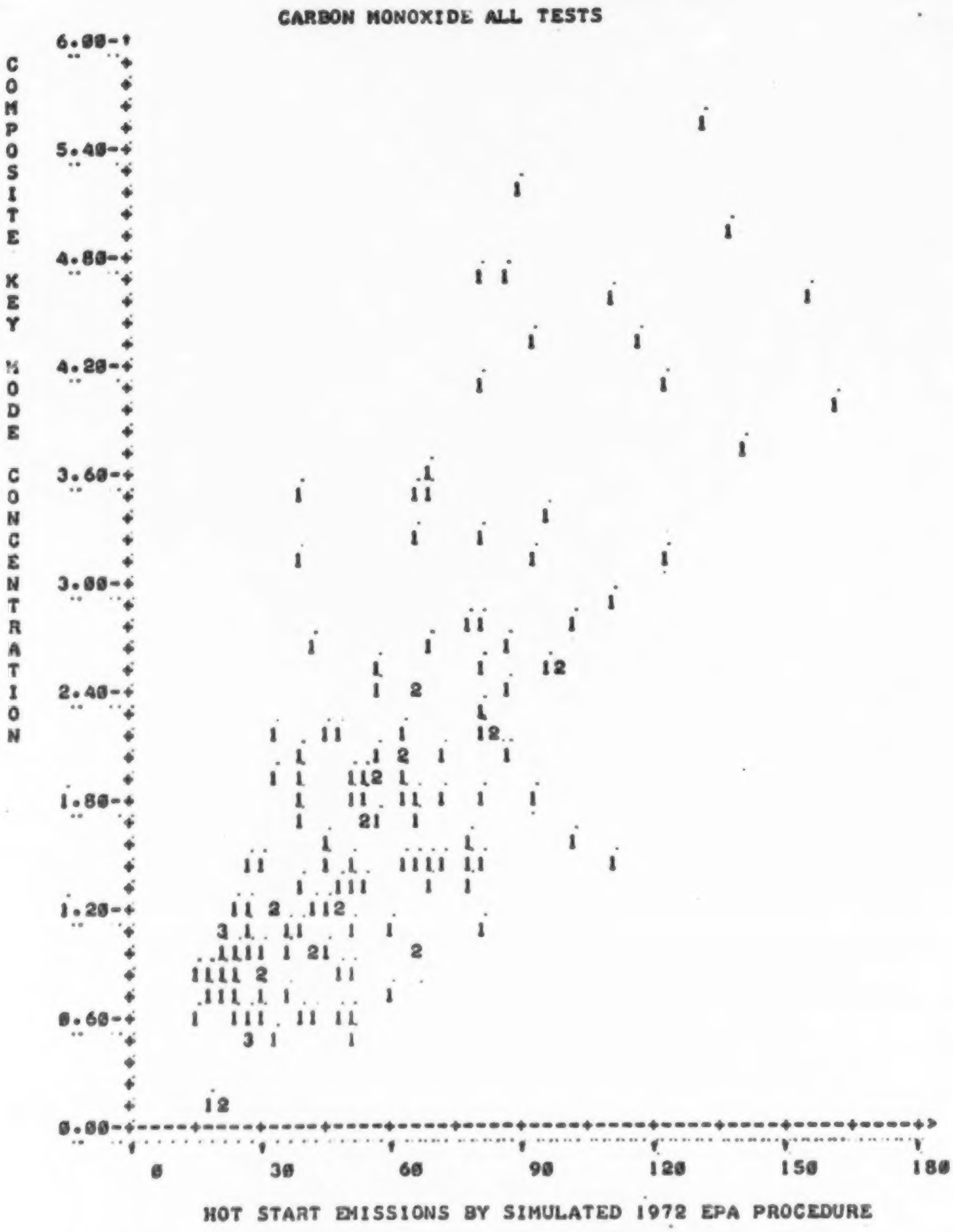
Table 16
Scattergram, Simulated Hot, 1972 FTP vs IM for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X'
IS PRINTED.

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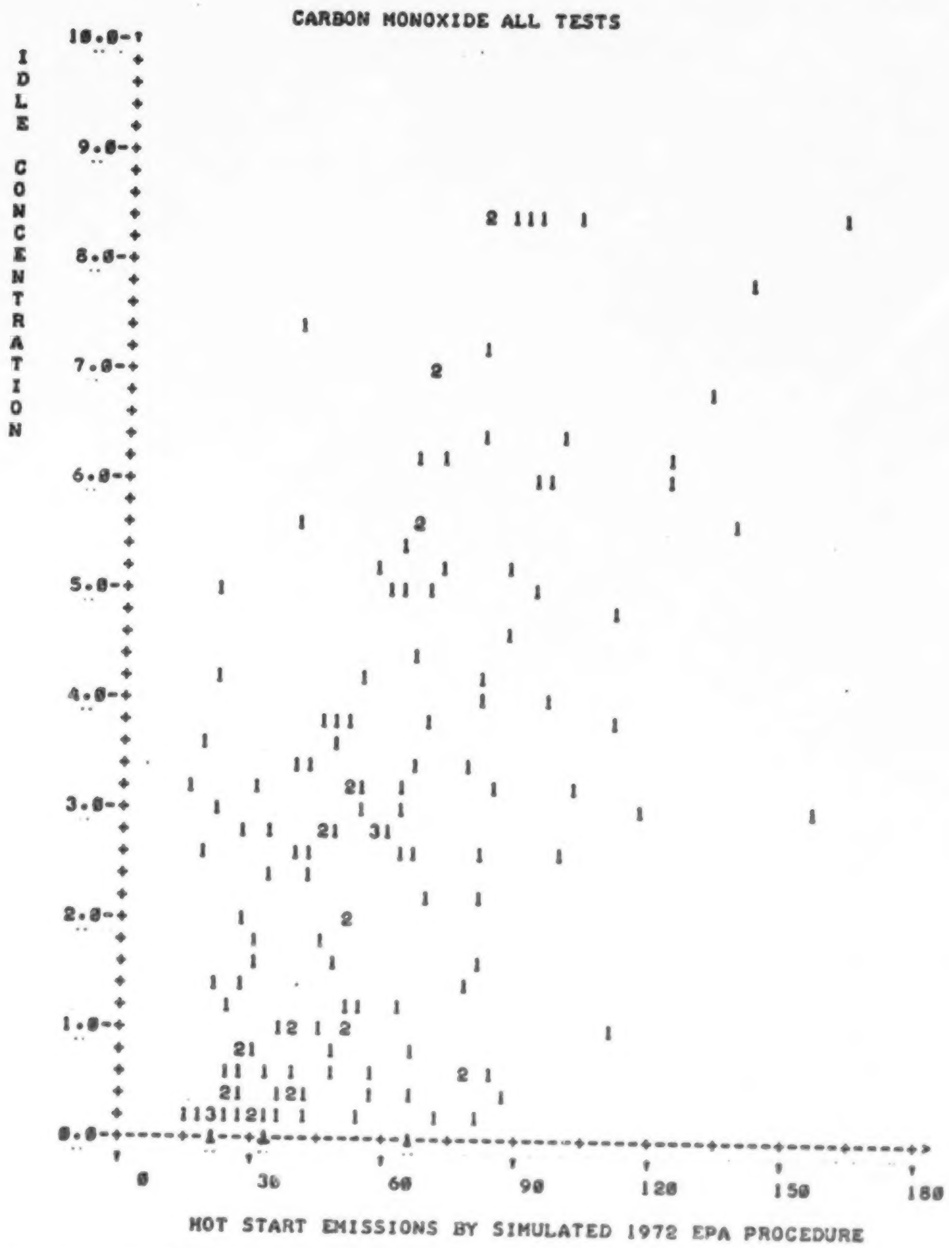
Table 17
Scattergram, Simulated Hot, 1972 FTP vs CKMC for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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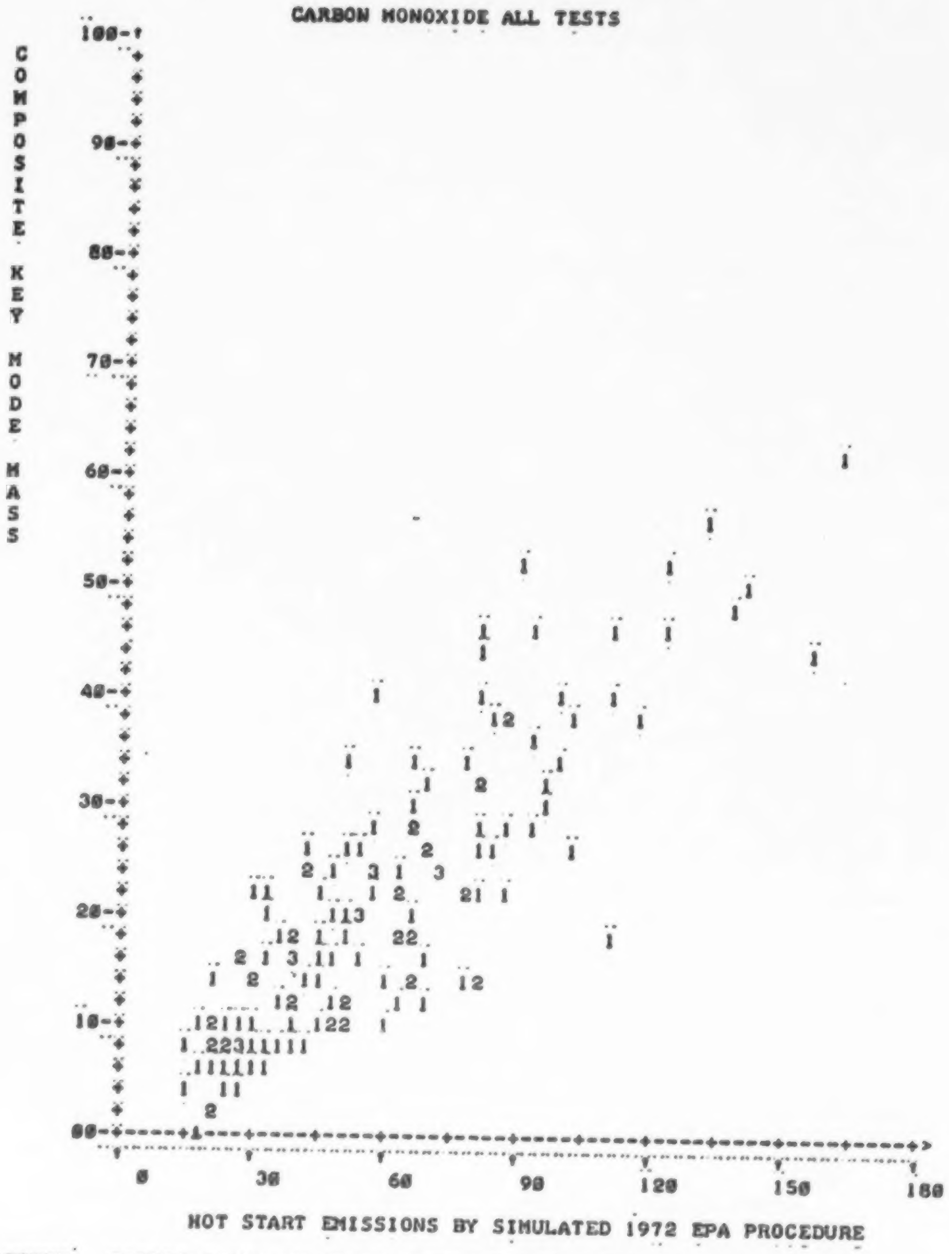
Table 18
Scattergram, Simulated Hot, 1972 FTP vs IC for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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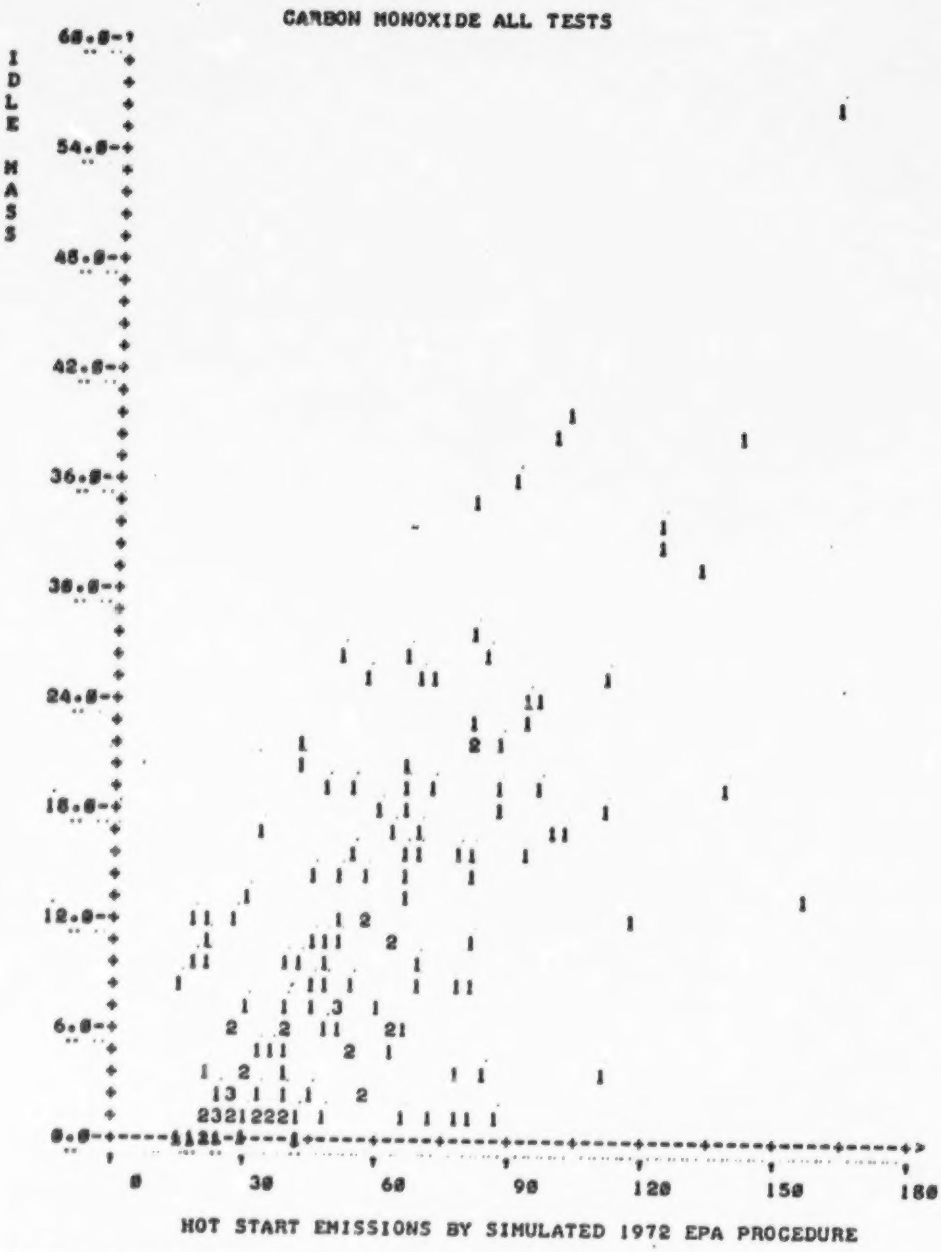
Table 19
Scattergram, Simulated Hot, 1972 FTP vs CKMM for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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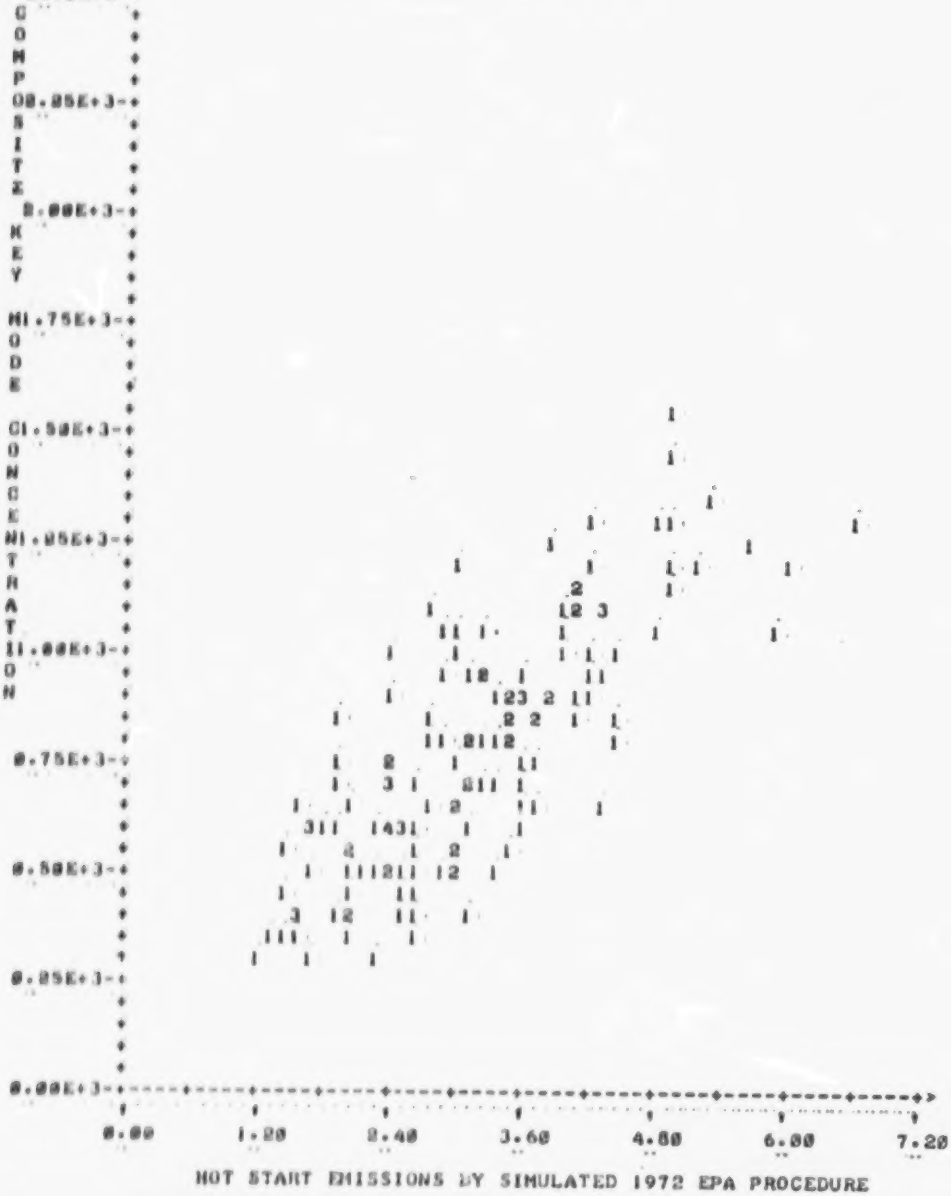
Table 20
Scattergram, Simulated Hot, 1972 FTP vs IM for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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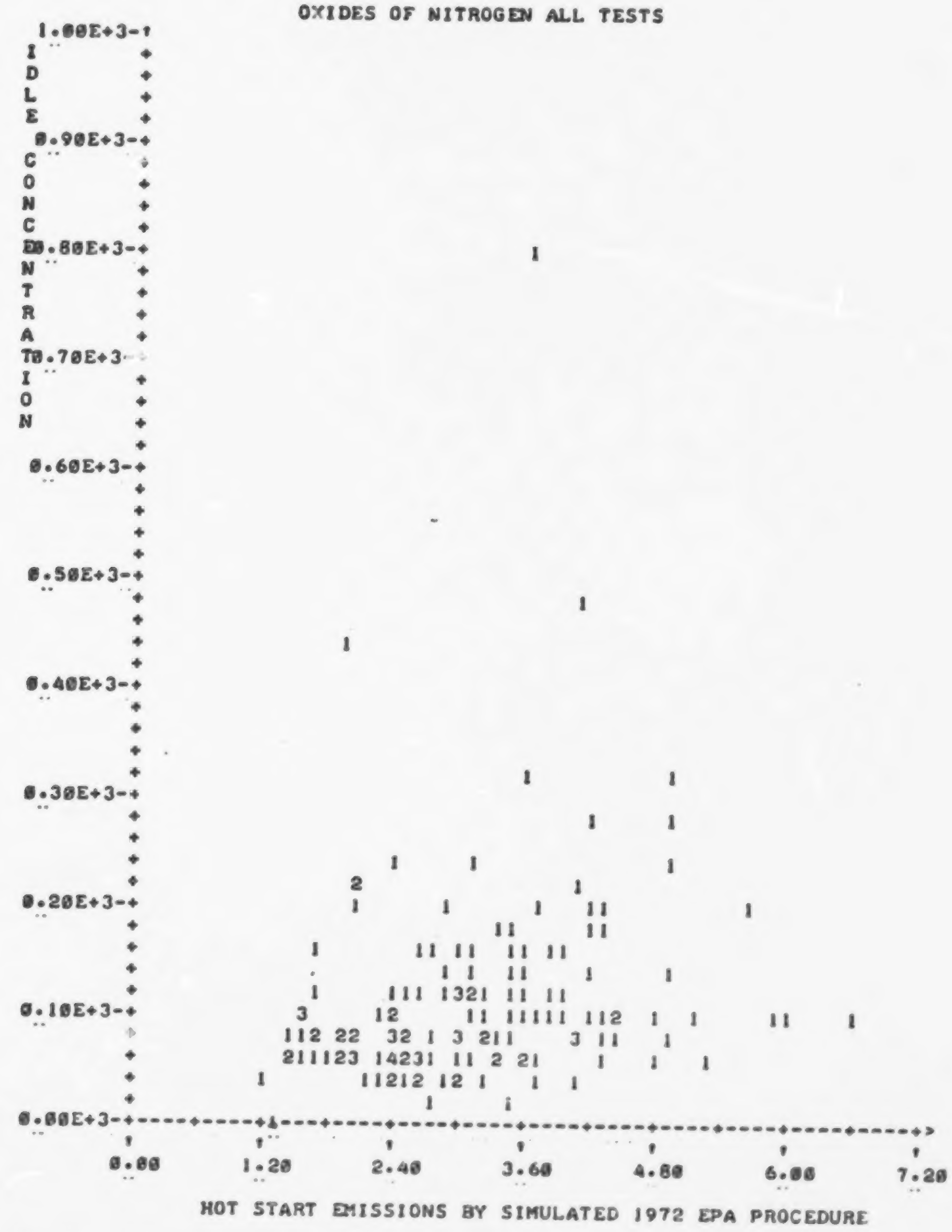
Table 21
Scattergram, Simulated Hot, 1972 FTP vs CKMC for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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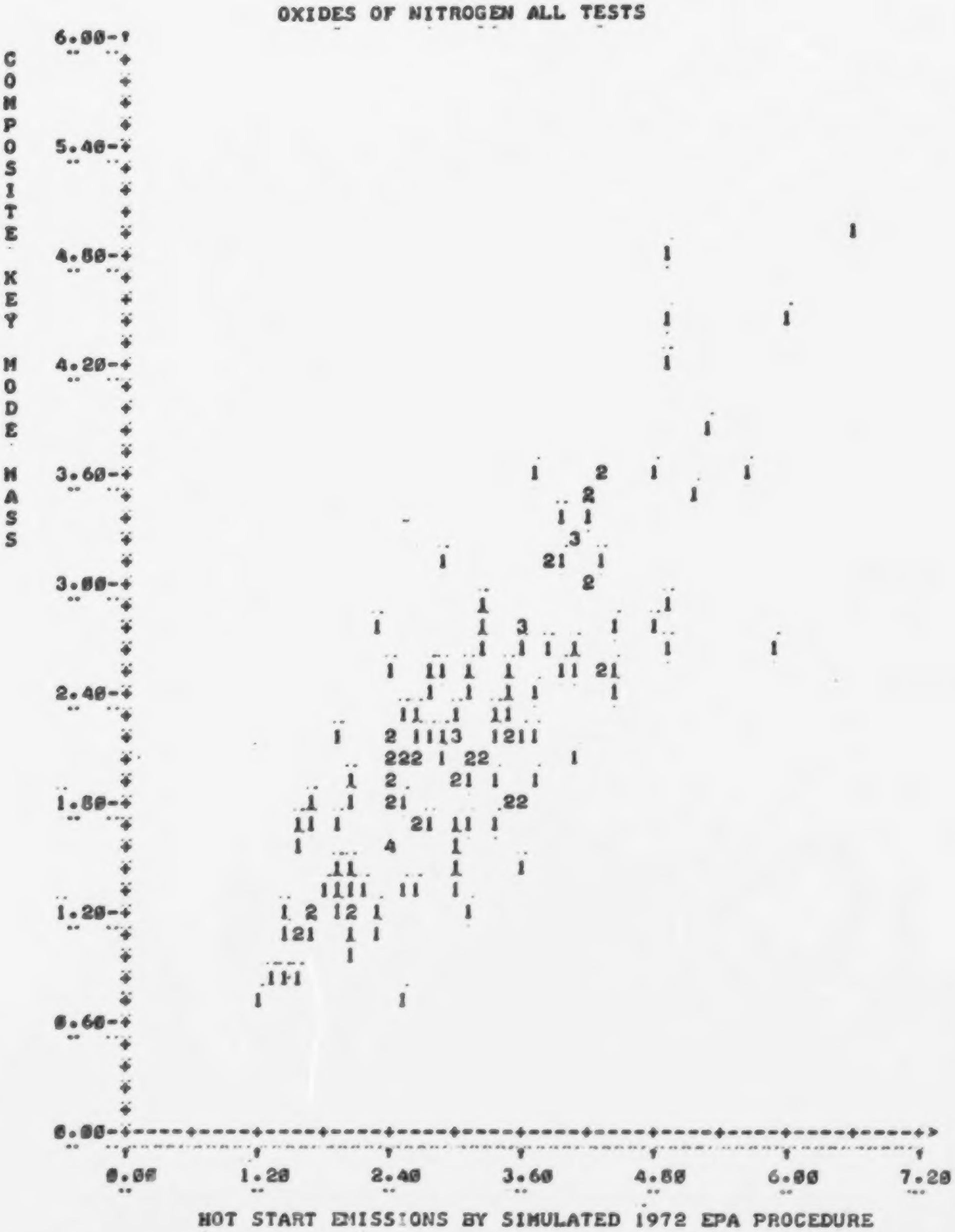
Table 22
Scattergram, Simulated Hot, 1972 FTP vs IC for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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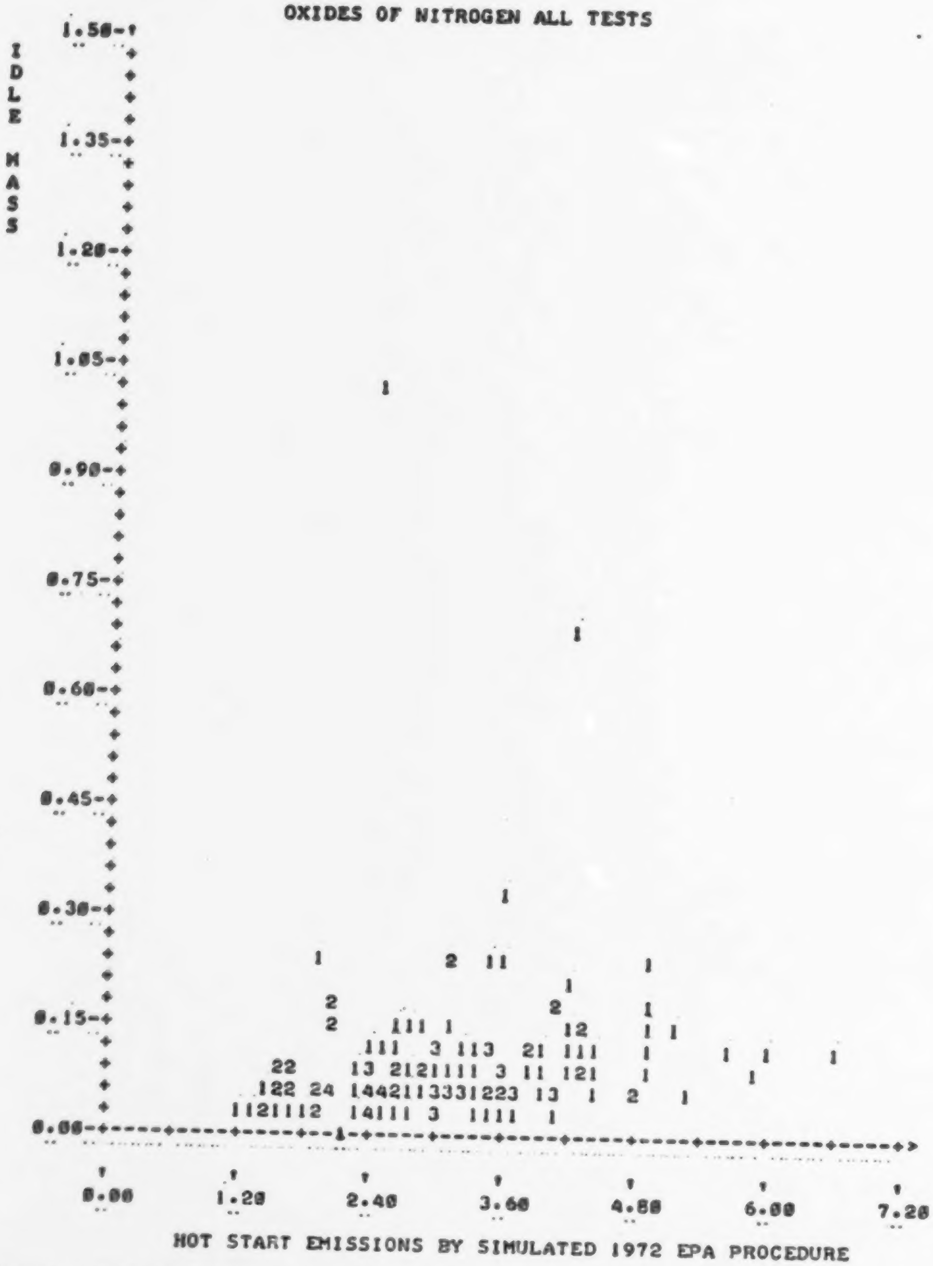
Table 23
Scattergram, Simulated Hot, 1972 FTP vs CKMM for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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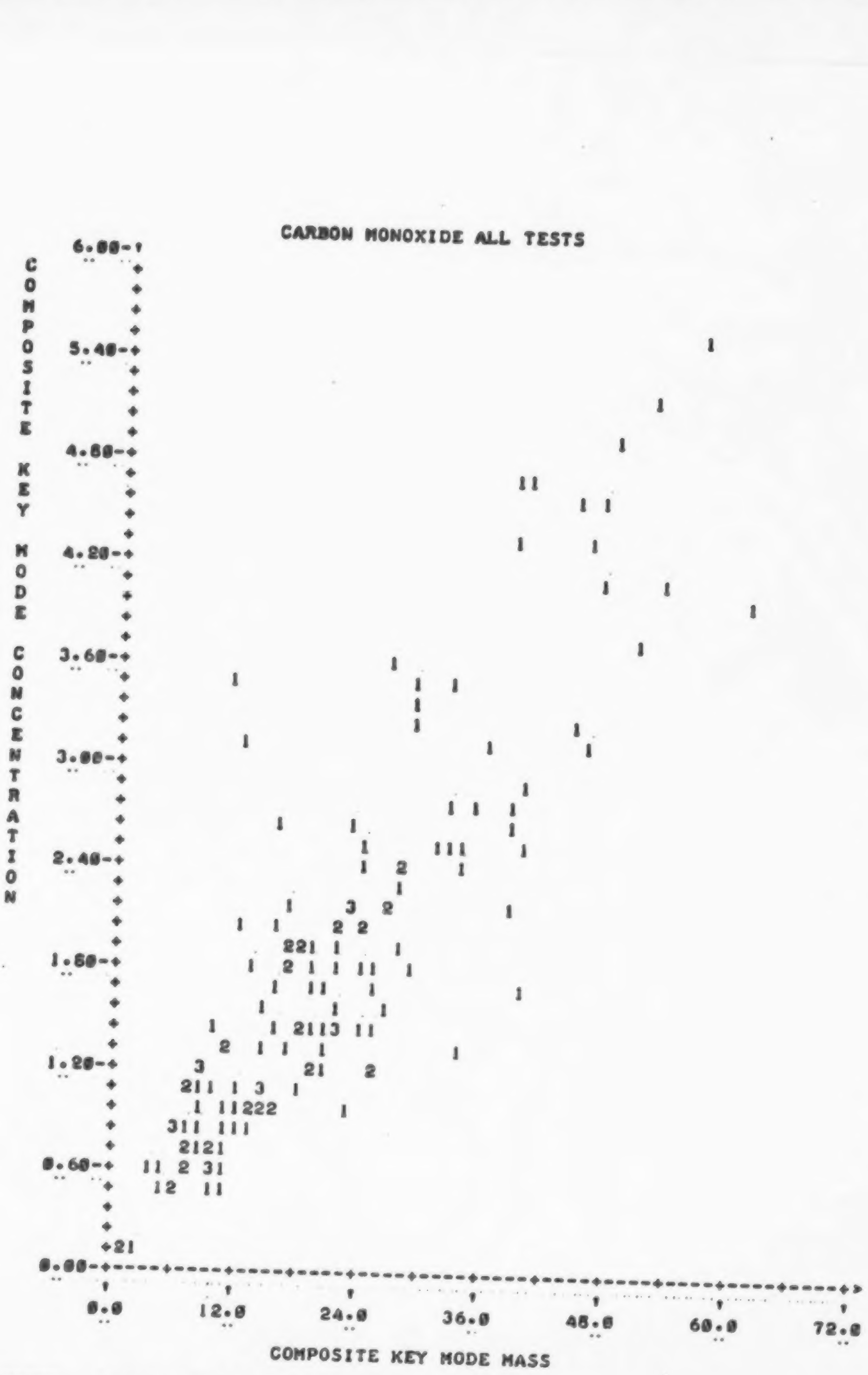
Table 24
Scattergram, Simulated Hot, 1972 FTP vs IM for NO_x

```
                    HYDROCARBONS ALL TESTS
 1.50E+4-'
C        +
O        +
M        +                                                       1
P        +
O1.35E+4-+
S        +
I        +
T        +
E        +
 1.20E+4-+
K        +
E        +
Y        +
         +
M1.05E+4-+
O        +
D        +
E        +
         +                                 1
C0.90E+4-+
O        +                             1
N        +
C        +                17
E        +
N0.75E+4-+                     1
T        +       1              1
R        +
A        +
T        +
I0.60E+4-+
O        +          1
N        +              1 1
         +             1
         +             1
 0.45E+4-+     2     21
         +     1   1  1 1
         +    1  23251   1
         +    1 13411
         +   2 13591
 0.30E+4-+   24247411
         +   42244
         +   22411
         +   2242
         + 12231 1
 0.15E+4-+ 1  1
         + 2 31
         + 1
         +  2
         +
 0.00E+4-+----+----+----+----+----+----+----+----+----+----+----+----+>
         '         '         '         '         '         '         '
        0.0       2.0       4.0       6.0       8.0      10.0      12.0

                       COMPOSITE KEY MODE MASS

LEGEND:  DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
         DATA POINTS.  IF MORE THAN NINE ARE COINCIDENT, AN 'X'
         IS PRINTED.
                 AUTOMOTIVE TESTING LABORATORIES, INC.
                19900 E. COLFAX, AURORA, COLORADO 80011
```

Table 25, Scattergram, CKMC vs CKMM for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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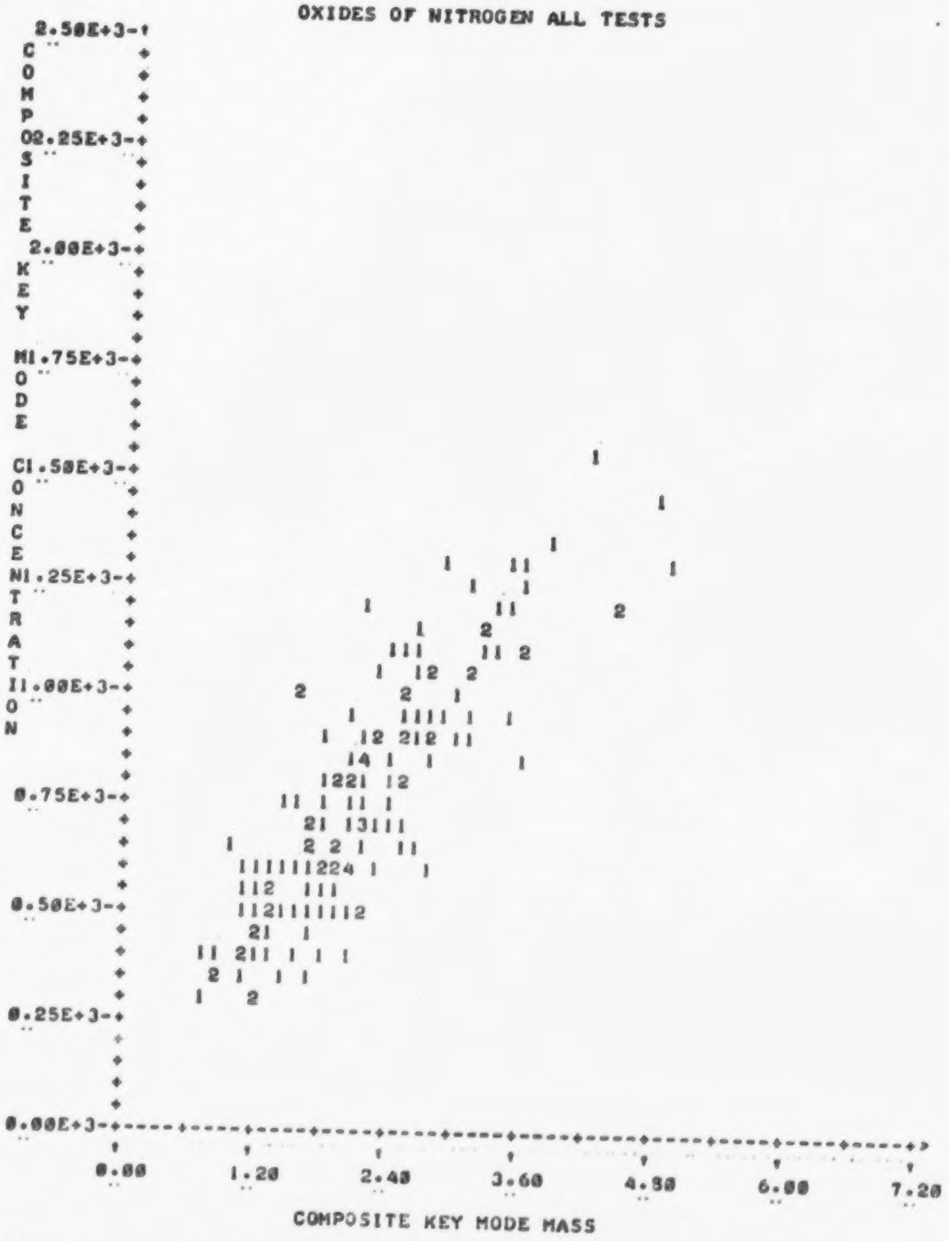
Table 26, Scattergram, CKMC vs CKMM for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 27, Scattergram, CKMC vs CKMM for NO_x

APPENDIX C

MAINTENANCE AND COST DATA

Appendix C contains detailed data on maintenance required and costs incurred. It should be noted that maintenance charges were determined on the basis of actual maintenance performed as opposed to indicated maintenance required. Rather subtle differences exist with respect to the two bases. For example; one vehicle was received with idle speed out of specifications, another with idle speed within specifications. With reference to the vehicle out of specifications, labor was charged to adjust that vehicle to lean best idle. With reference to the second vehicle, labor was charged for idle adjustment only if it was determined that the engine, although idling at the proper speed, was not set at a lean best air/fuel mixture. A similar situation exists with respect to ignition timing and point dwell. If adjustment of point dwell caused ignition timing to come into specifications, a charge to set ignition timing was not incurred.

Labor Estimates

To establish labor hours for engine repair and adjustment, a flat rate manual was referenced. Allowable labor as listed in the manual is shown by individual repair and by combination of repairs where, for repair of the same items, combined repair charges are less than the total of individual repair charges. In estimating costs by individual vehicle, the combined or lower costs are used. To establish cost estimates for parts, a retail parts catalog furnished by a local supplier was referenced.

To facilitate presentation of maintenance data, codes have been assigned and are used in tables which follow. Tolerances were established around manufacturers specifications and are:

Idle speed	± 25 rpm
Ignition timing	± 2 degrees
Ignition dwell	specifications
Choke angle	2 notches lean of specifications

Maintenance Codes

In Sample Maintenance and Costs tables, idle speed is shown as plus (+) or minus (-). Plus indicates that idle speed for the engine as it was received was higher than specifications and minus indicates a speed lower then specifications. The Numerals following (+) or (-) indicate the number of rpm higher or lower than specifications. A blank space indicates the vehicle was received with idle speed in specifications (within ± 25 rpm).

Ignition timing on engines as they were received is indicated in a like manner. Plus (+) indicates basic engine timing was advanced from specifications and minus (-) indicates it was retarded as received. The numeral indicates the number of degrees advanced or retarded. A blank indicates engine timing was within specifications (± 2 degrees).

Ignition point dwell is similarly reported. Plus (+) indicates dwell greater than specifications and minus (-) is less than specifications. The numeral indicates the number of degrees outside specifications. It should be noted here that dwell time (degrees) is not always specified as having tolerances; 28 to 32 degrees and 30 degrees. Dwell is reported as -2 for a dwell of 26 degrees in the former and -4 for a dwell of 26 degrees in the latter example.

With regard to the discussion of choke angles presented earlier in this report, choke angles are considered to be rich (R) as received if set richer than 2 notches lean of specifications. A choke was considered as being lean (L) if it failed to supply the fuel necessary to cold start the vehicle for the before maintenance test within a reasonable length of time (normally 20 seconds). Choke angles were considered rich (R) if richer than the above noted specifications and lean (L) if it failed to supply sufficient fuel for cold starting as just described.

Heat risers and PCV valves were considered as satisfactory if functional (all parts were free and operating), and unsatisfactory if binding or locked. An X in the tables indicates the part was removed or disconnected from the engine. The same is true for the air pump, check valve, gulp valve and connecting air injection hoses, where existent. An X opposite blowby indicates that blowby was observed during Key Mode operation. Detonation was not apparent from any vehicle.

With regard to remaining items (air cleaner, rotor, cap, contact points, spark plugs, and ignition wires), a blank indicates the item was found to be satisfactory, a one (1) indicates cleaning was required, and a two (2) indicates replacement was required.

All items found to require adjustment, cleaning, or replacement as indicated in Sample Maintenance and Costs tables were attended to; exceptions are designated by X for Car No. 51. On this vehicle, the PCV valve was connected; however, other items (the air injection system) had been removed and were not available to be re-installed.

Additional Maintenance Required

Seventy-five vehicles were tested, received maintenance, and were re-tested. Diagnosis indicated that extensive repair (in excess of nominal $25.00 limitation) was required on three (3) vehicles, two (2) in the area of carburetion and one (1) including not only carburetion, but also replacement of air injection emission controls which had been removed.

Vehicles requiring additional maintenance are indicated adjacent to ADD'L WORK REQ'D by an estimate of additional cost necessary to place vehicle in "normal" operating condition.

CAR NO:	1	2	3	4	5	6	7	8	9	10	11
IDLE SPEED	-25	-175	+30	-110	+160	-255	-110	+100	-70	-60	-140
IGNITION TIMING	+2	+4	+6	+3	+9	-3	+3	+12	+3	+4	-4
IGNITION DWELL			-6			-2	-2		-2	-3	
CHOKE ANGLE	R	R					R				
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER	2	2	2	2	1	2				2	
ROTOR											
CAP											
CONTACT POINTS			2	2							
SPARK PLUGS		2								2	
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D								71.00			
LABOR, ACTUAL	7.00	19.00	13.00	13.00	10.00	10.00	9.00	6.00	8.00	18.00	6.00
PARTS, ACTUAL	5.83	15.53	9.96	9.96		6.63				10.80	
TOTAL, ACTUAL	12.83	34.53	22.96	22.96	10.00	16.63	9.00	6.00	8.00	18.80	6.00

Table 1A, Sample Maintenance and Costs

Preceding page blank

CAR NO:	12	13	14	15	16	17	18	19	20	21	22
IDLE SPEED		+300		-40	-125	-125	-195	-50	+60	-50	-55
IGNITION TIMING	+8	+21	+3	+4	+3	+3	-2	+3	+3	-6	
IGNITION DWELL		-10	+3	+1	-2	+8	-3	+4			-2
CHOKE ANGLE		R		R		R	L	L			
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER		2	2	2		2				2	2
ROTOR											
CAP											
CONTACT POINTS		2					2	2			
SPARK PLUGS								2			
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	5.00	19.00	7.00	11.00	8.00	10.00	10.00	20.00	5.00	7.00	7.00
PARTS, ACTUAL		8.52	5.38	5.83		6.63	5.33	12.56		4.73	
TOTAL, ACTUAL	5.00	27.52	12.38	16.83	8.00	16.63	15.33	32.56	5.00	11.73	7.00

Table 1B, Sample Maintenance and Costs

CAR NO:	23	24	25	26	27	28	29	30	31	32	33
IDLE SPEED	-120	-30		-75	-30	+30	+170	-200	-150	-140	-210
IGNITION TIMING	+4	+3		-6	+6	+6		+3	-3	+6	+3
IGNITION DWELL				-2	+8	-8	+5	-8		+11	-3
CHOKE ANGLE											
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER		2									2
ROTOR											
CAP											
CONTACT POINTS	2										
SPARK PLUGS			2	2		2					
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	13.00	6.00	11.00	14.00	5.00	11.00	5.00	5.00	4.00	7.00	9.00
PARTS, ACTUAL	3.89	4.37	13.20	13.20		10.08					5.38
TOTAL, ACTUAL	16.89	10.37	24.20	27.20	5.00	21.08	5.00	5.00	4.00	7.00	14.38

Table 1C, Sample Maintenance and Costs

CAR NO:	34	35	36	37	38	39	40	41	42	43	44
IDLE SPEED	+30		-70	-40	-30	-30	-35	-90	-90	+40	
IGNITION TIMING	+5	+4	+4	-5	+8	+3	-4	+4	-3	+3	-10
IGNITION DWELL				+1		-3		-4	+1		
CHOKE ANGLE											
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER								2	2		
ROTOR						2					
CAP											
CONTACT POINTS						2					
SPARK PLUGS											
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	7.00	2.00	4.00	7.00	5.00	6.00	5.00	8.00	7.00	5.00	2.00
PARTS, ACTUAL						3.03		4.46	3.12		
TOTAL, ACTUAL	7.00	2.00	4.00	7.00	5.00	9.03	5.00	12.46	10.12	5.00	2.00

Table 1D, Sample Maintenance and Costs

CAR NO:	45	46	47	48	49	50	51	52	53	54	55
IDLE SPEED		+150	+120	-80	+50	-100	-300	-50	-100	-50	
IGNITION TIMING		-5	+3	-8	+5	-3	+3	+3		+3	+3
IGNITION DWELL			+2	-2			+12	-7		-4	+2
CHOKE ANGLE								R			
HEAT RISER											
PCV VALVE							X				
AIR PUMP							X				
CHECK VALVE							X				
GULP VALVE							X				
AIR HOSE							X				
AIR CLEANER	1										2
ROTOR											
CAP											
CONTACT POINTS			2			2	2	2		2	
SPARK PLUGS			2			2					
IGNITION WIRES											
BLOWBY							X				
DETONATION											
ADD'L WORK REQ'D							230.00				
LABOR, ACTUAL	2.00	4.00	17.00	5.00	5.00	14.00	9.00	13.00	2.00	9.00	3.00
PARTS, ACTUAL			16.13			11.76	6.63	5.33		5.43	6.82
TOTAL, ACTUAL	2.00	4.00	33.13	5.00	5.00	25.76	15.63	18.33	2.00	14.43	9.82

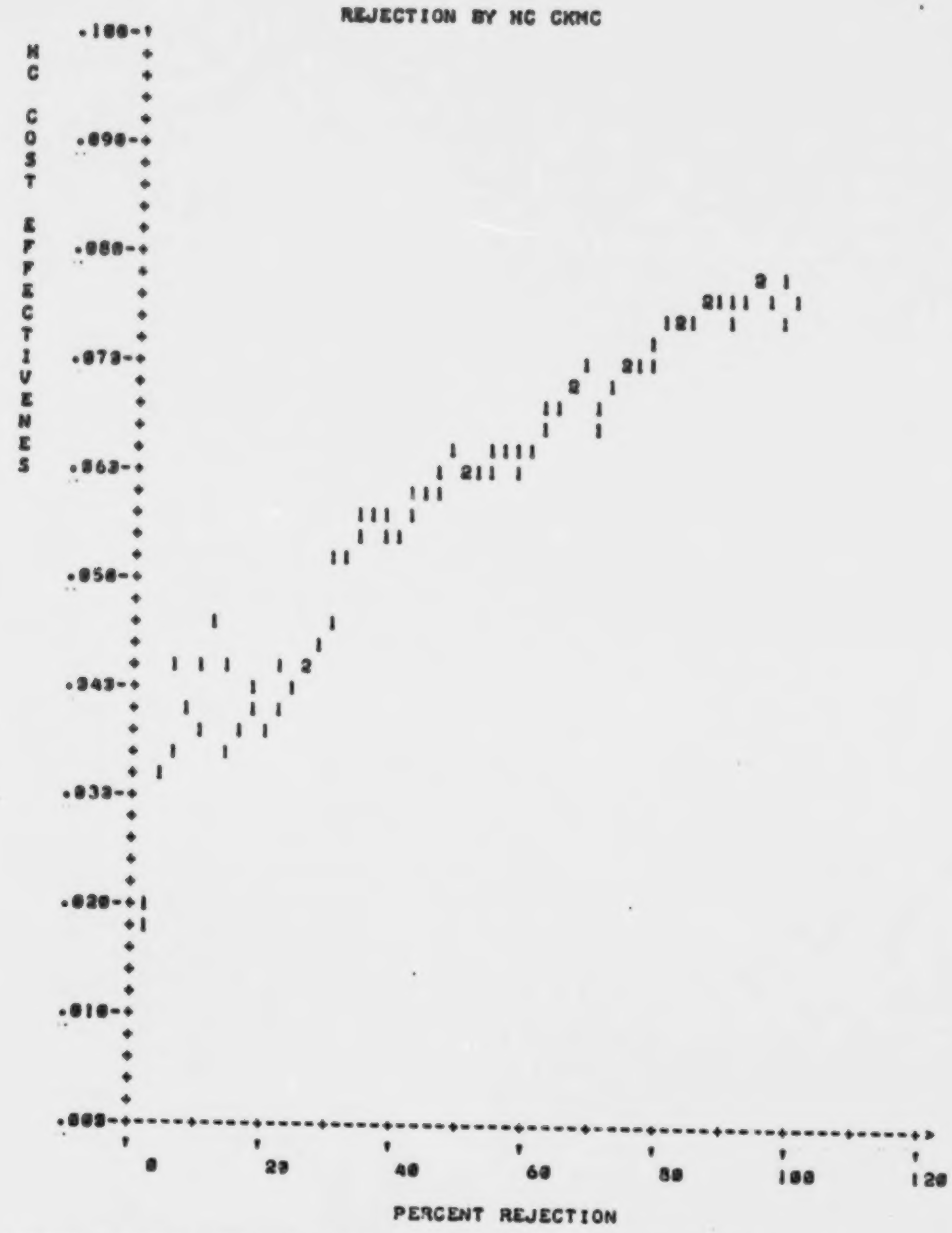
Table 1E, Sample Maintenance and Costs

CAR NO:	56	57	58	59	60	61	62	63	64	65	66
IDLE SPEED	-80	-100	-60	-150	+30	-150	+200	+100	-30	-110	+30
IGNITION TIMING		+3	-3	+5	+5	-3	+3	-3	+4	-3	-7
IGNITION DWELL		-3	-3	+6	+3		-1	+10			
CHOKE ANGLE						R	R				
HEAR RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER											
ROTOR											
CAP											
CONTACT POINTS				2	2						
SPARK PLUGS				2							
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	2.00	5.00	5.00	24.00	12.00	7.00	7.00	6.00	5.00	5.00	5.00
PARTS, ACTUAL				16.13	3.92						
TOTAL, ACTUAL	2.00	5.00	5.00	40.13	15.92	7.00	7.00	6.00	5.00	5.00	5.00

Table 1F, Sample Maintenance and Costs

CAR NO:	67	68	69	70	71	72	73	74	75
IDLE SPEED	+35	+100		-50	-100	-70	-180	-100	
IGNITION TIMING	+16		+3		+13	+11	+4	+12	
IGNITION DWELL			-10		-10		-6		
CHOKE ANGLE	R								R
HEAT RISER									
PCV VALVE									
AIR PUMP									
CHECK VALVE									
GULP VALVE									
AIR HOSE									
AIR CLEANER					2				2
ROTOR									
CAP									
CONTACT POINTS									
SPARK PLUGS		2			2	2			
IGNITION WIRES									
BLOWBY									
DETONATION									
ADD'L WORK REQ'D		63.45							
LABOR, ACTUAL	5.00	11.00	5.00	2.00	17.00	14.00	7.00	4.00	4.00
PARTS, ACTUAL		13.20			7.84	5.31			5.50
TOTAL, ACTUAL	5.00	24.20	5.00	2.00	24.84	19.31	7.00	4.00	9.50

Table 1G, Sample Maintenance and Costs



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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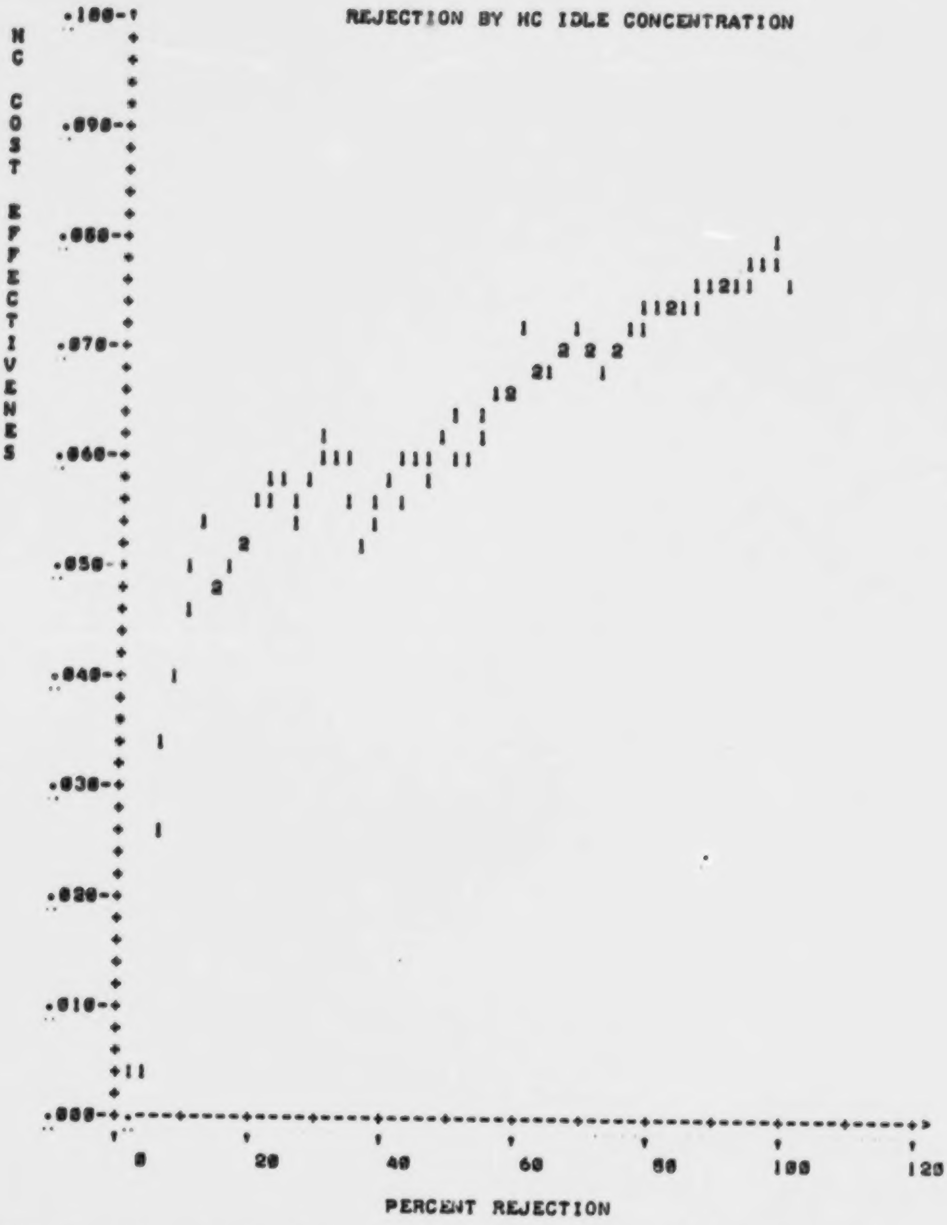
Table 2, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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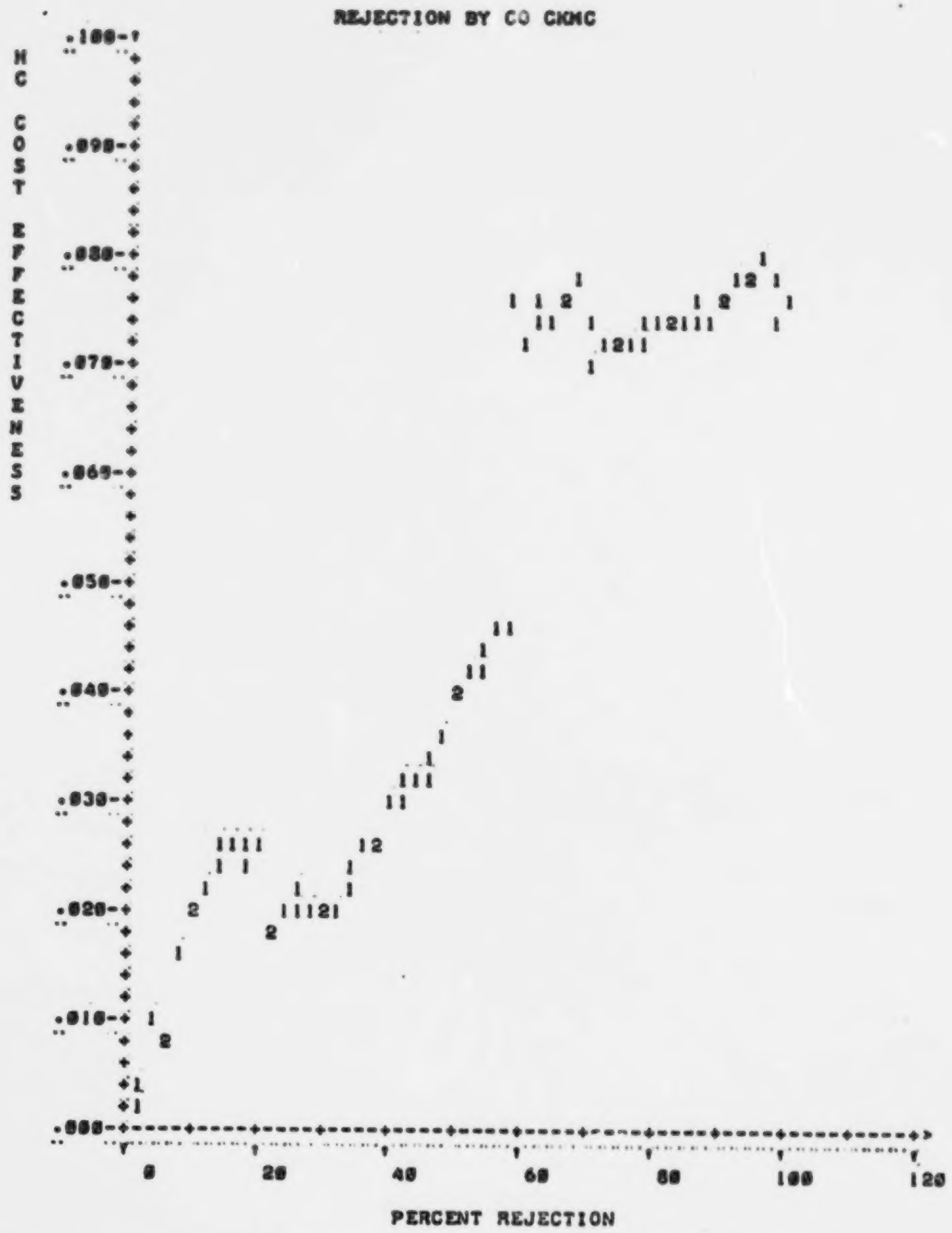
Table 3, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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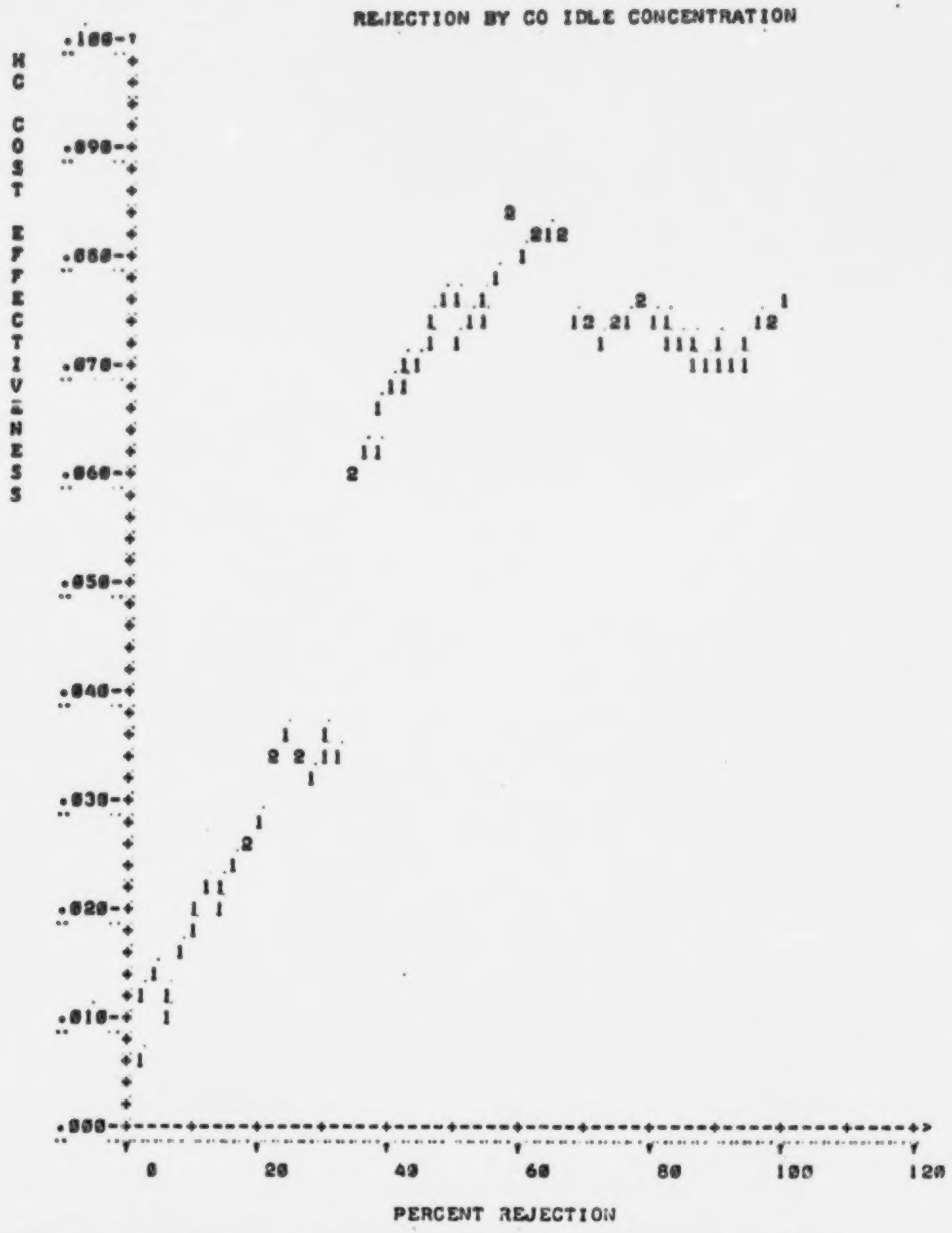
Table 4, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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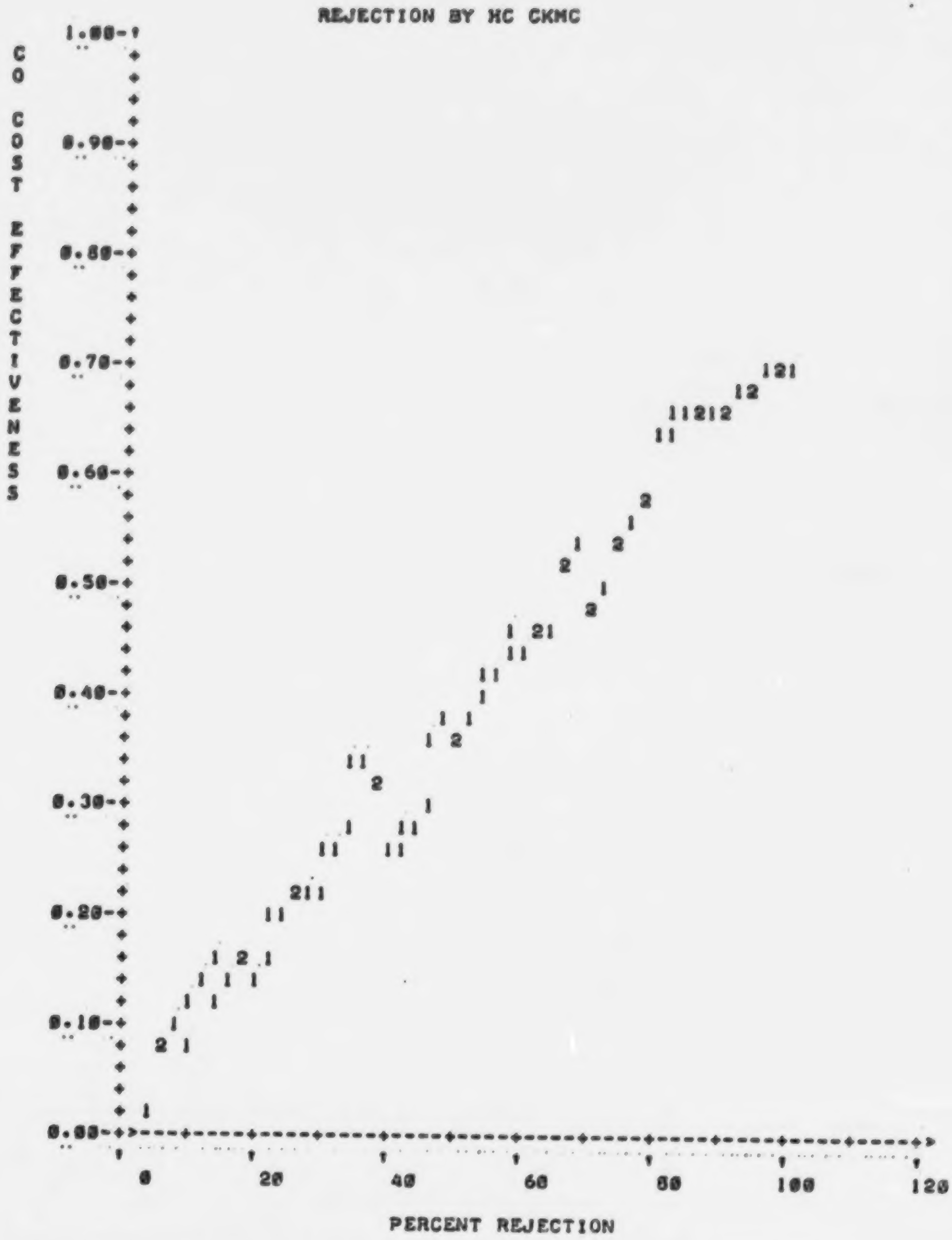
Table 5, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT
DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X'
IS PRINTED.

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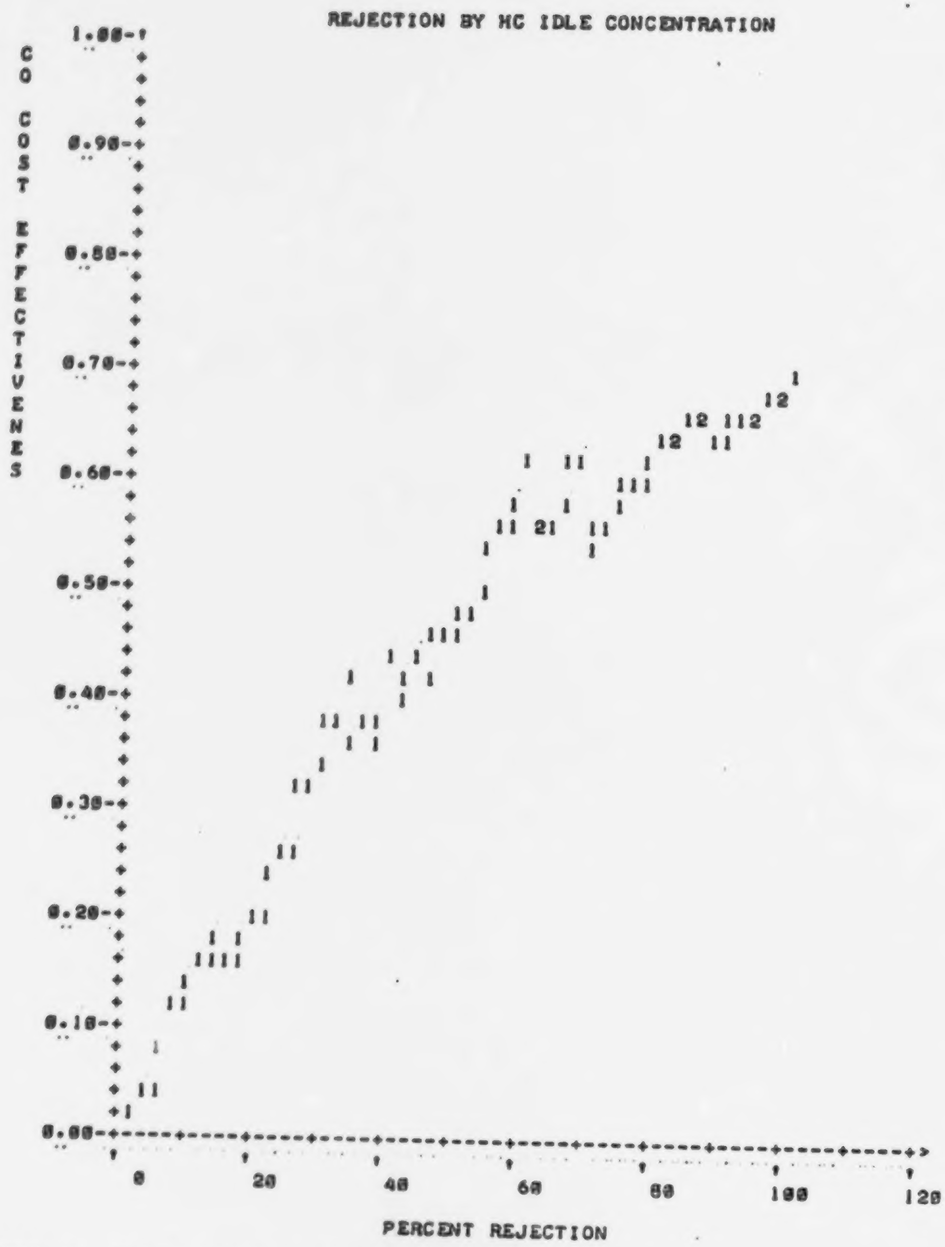
Table 6, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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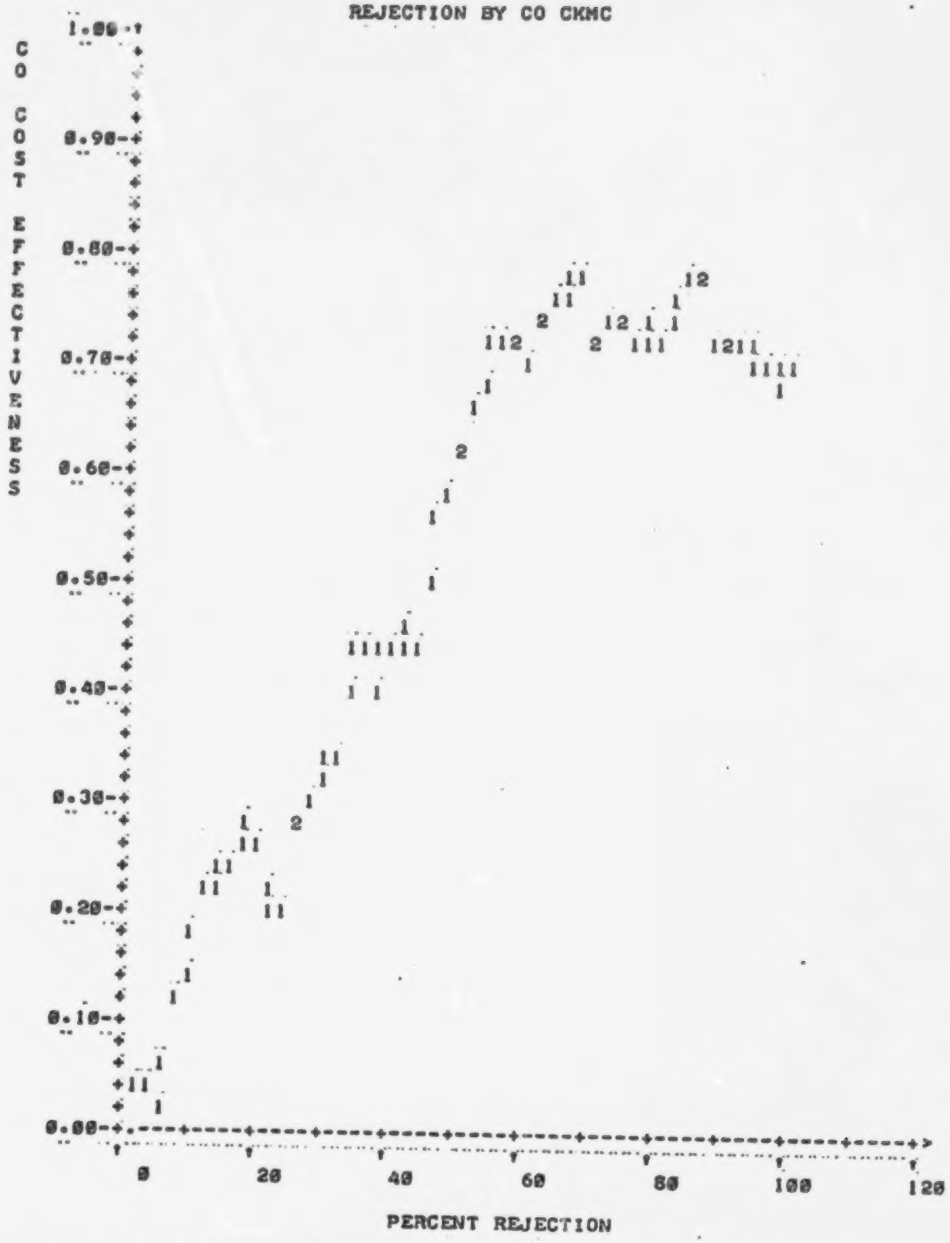
Table 7, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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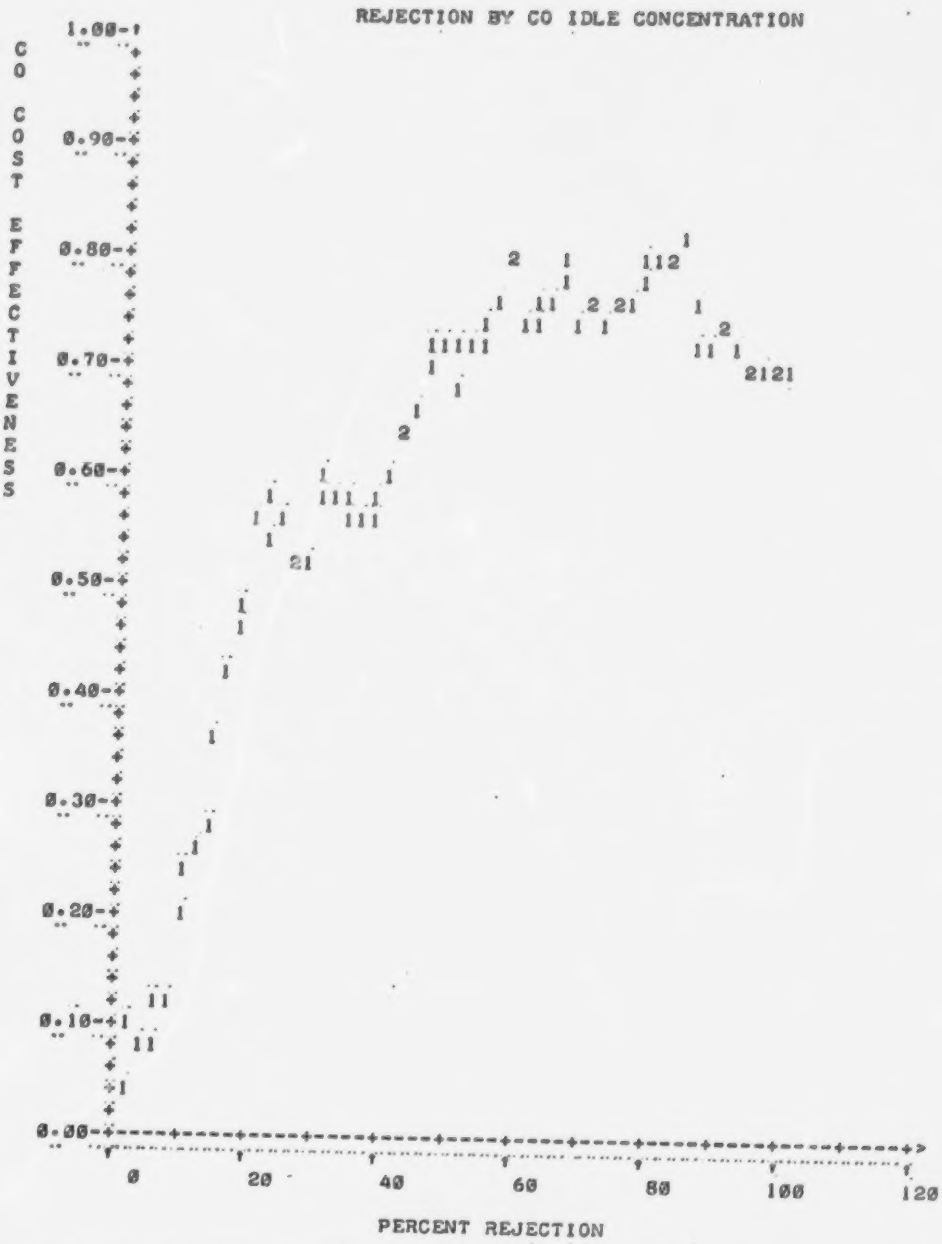
Table 8, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 9, Cost Effectiveness Plot

APPENDIX D

TEST SAMPLE AND EMISSION TEST DATA

Appendix D contains a description of the sample, emission results and other test parameters. Abbreviations and codes are used extensively throughout the data. The following information is provided to define test codes and abbreviations and to designate units of measurement.

Vehicle and Test Codes

TEST NUMBER: ATL test designation

CAR NUMBER: ATL vehicle designation

BEFORE: before maintenance data designation

AFTER: after maintenance data designation

YEAR: model year for which vehicle was manufactured

MAKE: first four letters of vehicle make

MODEL: first five letters/numeral(s) of vehicle model, exception: TBIRD is Thunderbird

CYL: number of engine cylinders

CID: cubic inch displacement of engine

BBL: number of barrels in carburetor

ODOMR: number of miles indicated on odometer

INRT: curb weight of vehicle plus 300 lbs, rounded to nearest 250 lb increment for vehicles weighing less than 3000 lbs and to nearest 500 lb increment for 3000 to 6000 lb vehicles, also, dynamometer inertia weight used for emission testing

RDHP: actual horsepower setting established at 50 miles per hour for 1975 FTP as calibrated and determined by coast down technique

A/C: Y indicates vehicle is equipped with air conditioning
N indicates vehicle is not equipped with air conditioning

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EVP: Y indicates vehicle is equipped with an evaporative emission control system
N indicates vehicle is not equipped with an evaporative emission control system

EXH: NO indicates vehicle is not equipped with an exhaust emission control system (or it has been removed)
AI indicates vehicle is equipped with an air injection exhaust emission control system
EM indicates vehicle is equipped with engine modifications for exhaust emission control

PCV: Y indicates vehicle is equipped with a positive crankcase ventilation system
N indicates vehicle is not equipped with a positive crankcase ventilation system

TRANS: indicates transmission type, A for automatic, S-3 for standard 3 speed, S-4 for standard 4 speed

Emission Data Units

MPG: miles per gallon as calculated by carbon balance technique from CVS bag data

1975 COMPOSITE: 1975 FTP emission tests results; units are in grams per mile for HC, CO, CO_2, NO_x

SIMULATED 1972 COLD: composite results from COLD TRANSIENT sample bag and COLD STABILIZED sample bag, units are in grams per mile for HC, CO, CO_2, NO_x

SIMULATED 1972 HOT: composite results from HOT TRANSIENT sample bag and COLD STABILIZED sample bag; units are in grams per mile for HC, CO, CO_2, NO_x

COLD TRANSIENT GRAMS: results from COLD TRANSIENT sample bag; unit is total grams in bag

COLD STABILIZED GRAMS: results from COLD STABILIZED sample bag; unit is total grams in bag

HOT TRANSIENT GRAMS: results from HOT TRANSIENT sample bag; unit is total grams in bag

HOT STABILIZED GRAMS: results from HOT STABILIZED sample bag; unit is total grams in bag

SPEED: actual speed at which the vehicle was driven during Key Mode operation

COMPOSITE: composite Key Mode emission data derived from a multiple regression analysis of modal data

CONC: abbreviation for concentration; units are parts per million as carbon for HC, mole percent for CO and CO_2 parts per million for NO_x

MASS: mass emissions as measured in CVS sample bag for each mode; units are grams per mile for HIGH CRUISE and LOW CRUISE and grams per minute for IDLE

ATL CAR NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1	1970	CHEV	CHEVE	8	350	2	37585	3500	11.2	N	N	EM	Y	A
2	1970	FORD	LTD	8	429	4	47496	4000	12.0	Y	N	EM	Y	A
3	1969	PLYM	FURY3	8	318	2	59290	4000	12.0	Y	N	EM	Y	A
4	1969	FORD	LTD	8	429	4	33441	4000	12.0	Y	N	EM	Y	A
5	1972	CHEV	CAMAR	8	307	2	7879	3500	11.2	N	Y	EM	Y	A
6	1968	PONT	GTO	8	389	4	68841	4000	12.0	Y	N	EM	Y	S-4
7	1971	PLYM	BARRA	8	318	2	18585	3500	11.2	Y	Y	EM	Y	A
8	1968	FORD	TBIRD	8	429	4	27986	4500	12.7	Y	N	EM	Y	A
9	1971	CHEV	C-10	8	350	4	12787	4000	12.0	N	N	AI	Y	S-4
10	1969	CHEV	NOVA	8	350	2	32731	3000	10.3	N	N	AI	Y	A
11	1971	FORD	PINTO	4	122	2	7103	2250	8.8	N	Y	AI	Y	S-4
12	1972	FORD	GALAX	8	400	2	10393	4000	12.0	Y	Y	AI	Y	A
13	1972	PLYM	SATEL	8	318	2	8513	3500	11.2	N	Y	EM	Y	A
14	1969	PONT	CATAL	8	400	2	75644	4000	12.0	Y	N	EM	Y	A
15	1968	CHEV	IMPAL	8	327	4	46072	4000	12.0	Y	N	EM	Y	A
16	1970	CHEV	CAPRI	8	400	2	32533	4000	12.0	Y	N	EM	Y	A
17	1969	OLDS	TORON	8	455	4	52867	4500	12.7	Y	N	EM	Y	A
18	1969	FORD	MUSTA	8	428	4	31426	3500	11.2	N	N	AI	Y	A
19	1969	AMMO	440	6	232	1	69119	3500	11.2	N	N	EM	Y	A
20	1972	CHRY	NEWPO	8	400	2	10730	4500	12.7	Y	Y	EM	Y	A
21	1970	LINC	CONTI	8	460	4	20038	5000	13.4	Y	N	AI	Y	A
22	1970	DATS	510	4	97	2	12449	2500	9.4	N	N	AI	Y	A
23	1970	PLYM	SATEL	8	318	2	12922	3500	11.2	N	N	EM	Y	A
24	1969	FORD	LTD	8	390	2	35655	4000	12.0	Y	N	EM	Y	A
25	1970	PONT	CATAL	8	400	2	17070	5000	13.4	Y	N	EM	Y	A

Table 1A, Test Sample As Equipped

ATL CAR

NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
26	1970	OLDS	VISTA	8	350	4	50224	4500	12.7	Y	N	EM	Y	A
27	1971	FORD	MAVER	6	200	1	16209	2750	9.9	N	Y	EM	Y	A
28	1971	CHEV	NOVA	6	250	1	15482	3500	11.2	N	Y	EM	Y	A
29	1970	VOLK	SEDAN	4	97	1	27803	2000	8.3	N	N	EM	Y	S-4
30	1971	TOYO	COROL	4	71	2	28311	2500	9.4	Y	N	AI	Y	S-4
31	1970	DODG	DART	8	318	2	24507	3500	11.2	Y	N	EM	Y	A
32	1970	MERC	MARQU	8	429	2	12956	4500	12.7	N	N	EM	Y	A
33	1969	BUIC	SPORT	8	400	4	39637	4500	12.0	Y	N	EM	Y	A
34	1972	CADI	DEVIL	8	472	4	5122	5000	13.4	Y	Y	AI	Y	A
35	1968	FORD	FAIRL	8	289	2	47255	3500	11.2	N	N	EM	Y	A
36	1972	CHEV	MONTE	8	402	4	4662	4000	12.0	Y	Y	AI	Y	A
37	1970	AMMO	AMBAS	8	360	2	26651	4000	12.0	Y	N	EM	Y	A
38	1970	FORD	GALAX	8	390	2	58331	4000	12.0	Y	N	EM	Y	A
39	1958	DODG	POLAR	8	318	2	58220	4000	12.0	N	N	EM	Y	A
40	1972	FORD	LTD	8	400	2	6450	4000	12.0	Y	Y	EM	Y	A
41	1971	OLDS	TORON	8	455	4	29035	5000	13.4	Y	Y	EM	Y	A
42	1968	PLYM	FURY2	8	318	2	56018	4000	12.0	Y	N	EM	Y	A
43	1971	DATS	510	4	97	2	13199	2750	9.9	N	Y	AI	Y	S-4
44	1972	VOLV	142S	4	121	2	6185	2750	9.9	N	Y	EM	Y	S-4
45	1970	VOLK	1600	4	97	0	48183	2500	9.4	N	N	EM	Y	S-4
46	1971	DATS	510	4	71	2	24774	2250	8.8	N	N	EM	Y	S-4
47	1969	MERC	COMET	8	302	2	24514	3500	11.2	Y	N	EM	Y	A
48	1968	MERC	COMET	6	200	1	35986	3500	11.2	N	N	AI	Y	S-3
49	1968	CHRY	NEWPO	8	383	4	38455	4500	12.7	Y	N	EM	Y	A
50	1971	FORD	PINTO	4	94	1	32609	2250	8.8	N	Y	EM	Y	S-4

Table 1B, Test Sample As Equipped

ATL CAR NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
51	1968	OPEL	KADET	4	91	2	46438	2250	8.8	N	N	N	Y	S-4
52	1968	FORD	FAIRL	8	289	2	42332	3500	11.2	Y	N	EM	Y	A
53	1972	VOLV	142S	4	121	2	19175	2750	9.9	N	Y	EM	Y	S-4
54	1971	MERC	MONTE	8	400	2	9939	4500	12.7	Y	Y	EM	Y	A
55	1971	PONT	SAFAR	8	400	4	10868	5000	13.4	Y	Y	EM	Y	A
56	1968	BUIC	SPECI	8	350	2	23493	3500	11.2	N	N	EM	Y	A
57	1969	CHEV	IMPAL	8	350	4	35953	4000	12.0	Y	N	EM	Y	A
58	1969	OLDS	DELTA	8	455	2	11323	4000	12.0	Y	N	EM	Y	A
59	1968	PONT	TEMPE	8	350	2	77968	4000	12.0	Y	N	EM	Y	A
60	1969	DODG	DART	6	225	1	21739	3000	10.3	N	N	EM	Y	A
61	1970	BUIC	ELECT	8	455	4	38759	4500	12.7	Y	N	EM	Y	A
62	1971	CHEV	IMPAL	8	400	2	13300	4500	12.7	Y	Y	EM	Y	A
63	1969	CHRY	300	8	383	4	34481	4500	12.7	Y	N	EM	Y	A
64	1970	FORD	MAVER	6	250	1	29780	2750	9.9	N	N	EM	Y	A
65	1968	VOLV	144S	4	121	2	17054	3000	10.3	Y	N	EM	Y	A
66	1970	PLYM	FURY	8	440	4	27056	4000	12.0	Y	N	EM	Y	A
67	1971	FORD	LTD	8	351	2	21739	4500	12.7	Y	Y	EM	Y	A
68	1970	CHEV	CAMAR	8	307	2	25707	3500	11.2	Y	N	EM	Y	S-3
69	1969	VOLK	CAMPM	4	97	1	48310	3000	10.3	N	N	EM	Y	S-4
70	1971	DODG	COLT	4	97	2	17247	2250	8.8	N	Y	EM	Y	S-4
71	1968	CHEV	IMPAL	8	307	2	63396	4000	12.0	Y	N	EM	Y	A
72	1969	CHEV	CHEVE	8	396	4	40423	3500	11.2	Y	N	EM	Y	A
73	1968	CHEV	BELAI	8	307	2	72571	4000	12.0	N	N	AI	Y	A
74	1969	VOLK	SEDAN	4	97	1	33994	2000	8.3	N	N	EM	Y	S-4
75	1972	BUIC	LESAB	8	350	4	10125	4500	12.7	Y	Y	EM	Y	A

Table 1C, Test Sample As Equipped

CARBON MONOXIDE

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
AS RECEIVED						
GVW						
1000-2799	46.95	26.69	100.68	22.47	78.21	15
2800-3799	65.96	26.35	109.84	27.64	82.20	20
3800-3799	87.55	33.88	194.24	38.44	155.80	35
4800-5799	59.25	20.84	89.78	35.43	54.35	5
MODEL YEAR						
1968	87.11	44.75	194.24	27.64	166.60	15
1969	80.79	21.98	125.89	37.26	88.62	17
1970	65.69	28.03	109.84	22.61	87.24	18
1971	55.47	32.76	144.04	22.47	121.57	15
1972	68.95	32.59	119.75	28.98	90.77	10
MANUFACTURER						
AM. MOTORS	78.12	35.11	102.95	53.30	49.65	2
BUICK	84.22	13.60	103.57	72.04	31.53	4
CADILLAC	46.66	46.92	46.66	46.66	0.00	1
CHEVROLET	80.39	40.79	194.24	39.50	154.74	14
CHRYSLER	103.29	20.91	119.75	79.76	39.99	3
DODGE	52.30	16.22	75.15	39.06	36.09	4
FORD	70.76	45.13	167.50	22.47	145.04	15
IMPERIAL	0.00	*****	-*****	*****	-*****	0
LINCOLN	89.78	90.51	89.78	89.78	0.00	1
MERCURY	62.24	20.85	87.74	37.26	50.48	4
OLDSMOBILE	91.29	28.46	125.89	56.64	69.25	4
PLYMOUTH	74.21	27.85	121.41	35.45	85.97	6
PONTIAC	71.73	21.83	88.38	35.43	52.95	5
IMPORTS	52.57	24.67	87.56	22.61	64.95	12
AFTER MAINTENANCE						
GVW						
1000-2799	47.24	24.21	98.52	19.08	79.44	15
2800-3799	54.47	20.96	99.40	21.75	77.65	20
3800-3799	77.14	34.92	197.00	35.94	161.06	35
4800-5799	55.71	12.83	70.27	35.62	34.65	5
MODEL YEAR						
1968	80.79	46.56	197.00	21.75	175.24	15
1969	67.83	21.49	104.98	37.34	67.64	17
1970	56.26	20.93	86.85	24.85	62.00	18
1971	48.39	27.10	130.32	19.08	111.23	15
1972	67.32	26.48	127.42	35.94	91.48	10
MANUFACTURER						
AM. MOTORS	55.11	5.09	58.70	51.51	7.19	2
BUICK	62.85	25.73	86.85	37.43	49.41	4
CADILLAC	53.92	54.02	53.92	53.92	0.00	1
CHEVROLET	73.50	40.36	197.00	33.19	163.81	14
CHRYSLER	103.03	21.44	127.42	87.17	40.25	3
DODGE	49.40	11.31	64.67	37.34	27.33	4
FORD	60.82	40.21	150.08	19.08	130.99	15
IMPERIAL	0.00	*****	-*****	*****	-*****	0
LINCOLN	70.27	72.97	70.27	70.27	0.00	1
MERCURY	51.04	16.21	74.97	39.75	35.21	4
OLDSMOBILE	82.78	21.02	104.98	56.76	48.22	4
PLYMOUTH	62.13	24.74	99.92	32.15	67.76	6
PONTIAC	58.86	20.19	86.66	35.62	51.04	5
IMPORTS	53.35	24.15	98.52	24.85	73.67	12

Table 2, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

HYDROCARBONS

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
		AS RECEIVED				
GVW						
1800-2799	4.927	3.772	16.52	2.41	14.11	15
2800-3799	6.246	5.931	30.14	3.26	26.88	20
3800-3799	6.023	2.437	15.56	1.70	13.86	35
4800-5799	3.558	1.114	4.29	1.59	2.70	5
MODEL YEAR						
1968	7.673	4.059	16.52	3.82	12.71	15
1969	6.845	6.055	30.14	3.98	26.16	17
1970	4.824	2.217	12.02	2.41	9.61	18
1971	4.424	1.674	8.95	2.41	6.54	15
1972	4.277	2.021	8.28	1.59	6.69	10
MANUFACTURER						
AM. MOTORS	4.514	.753	5.05	3.98	1.06	2
BUICK	5.018	1.023	6.15	3.82	2.33	4
CADILLAC	1.591	1.612	1.59	1.59	0.00	1
CHEVROLET	8.077	7.261	30.14	1.70	28.44	14
CHRYSLER	6.568	.233	6.74	6.30	0.44	3
DODGE	4.160	.612	5.04	3.69	1.35	4
FORD	5.284	1.932	9.21	2.80	6.41	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	3.823	3.834	3.82	3.82	0.00	1
MERCURY	5.410	1.795	7.97	4.01	3.96	4
OLDSMOBILE	4.980	.710	5.53	3.94	1.59	4
PLYMOUTH	4.758	1.598	7.63	3.26	4.37	6
PONTIAC	6.502	3.312	12.13	4.14	7.99	5
IMPORTS	5.133	3.973	16.52	2.41	14.11	12
		AFTER MAINTENANCE				
GVW						
1800-2799	4.554	3.844	17.02	2.20	14.82	15
2800-3799	4.479	1.956	11.82	2.73	9.10	20
3800-3799	5.276	1.855	12.40	1.88	10.53	35
4800-5799	3.830	1.528	5.16	1.33	3.83	5
MODEL YEAR						
1968	6.696	3.640	17.02	2.90	14.13	15
1969	4.723	.947	6.73	2.73	4.00	17
1970	4.789	2.210	11.82	2.43	9.40	18
1971	3.629	1.163	5.71	2.20	3.51	15
1972	4.634	2.090	8.69	1.33	7.35	10
MANUFACTURER						
AM. MOTORS	4.552	.425	4.85	4.25	0.60	2
BUICK	4.157	.942	5.18	2.90	2.28	4
CADILLAC	1.332	1.342	1.33	1.33	0.00	1
CHEVROLET	5.378	3.090	12.40	1.88	10.53	14
CHRYSLER	6.233	.676	6.73	5.46	1.27	3
DODGE	4.090	1.402	5.37	2.73	2.64	4
FORD	4.560	1.755	8.30	2.34	5.97	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	4.977	5.060	4.98	4.98	0.00	1
MERCURY	4.462	.886	5.37	3.47	1.89	4
OLDSMOBILE	4.444	.495	5.04	3.83	1.21	4
PLYMOUTH	4.501	1.458	6.50	2.86	3.63	6
PONTIAC	5.445	1.376	7.65	3.85	3.81	5
IMPORTS	5.087	4.164	17.02	2.20	14.82	12

Table 3, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

OXIDES OF NITROGEN

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
AS RECEIVED						
GVW						
1800-2799	2.720	1.181	5.894	1.226	4.668	15
2800-3799	3.091	.993	4.743	1.445	3.298	20
3800-3799	3.089	.996	5.263	1.295	3.968	35
4800-5799	3.880	1.675	6.596	2.292	4.303	5
MODEL YEAR						
1968	2.972	1.113	5.263	1.295	3.968	15
1969	3.460	1.059	5.031	1.437	3.594	17
1970	2.925	.732	4.094	1.445	2.649	18
1971	3.046	1.523	6.596	1.285	5.311	15
1972	2.840	.936	4.415	1.226	3.189	10
MANUFACTURER						
AM. MOTORS	3.865	.212	4.015	3.716	.299	2
BUICK	2.970	1.290	4.899	2.199	2.700	4
CADILLAC	2.771	2.775	2.771	2.771	0.000	1
CHEVROLET	3.138	1.036	5.263	1.295	3.968	14
CHRYSLER	2.434	1.032	3.498	1.437	2.061	3
DODGE	2.735	1.257	4.550	1.818	2.732	4
FORD	3.435	1.303	5.894	1.285	4.609	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	2.292	2.302	2.292	2.292	0.000	1
MERCURY	3.299	1.357	4.743	1.465	3.278	4
OLDSMOBILE	2.659	.666	3.647	2.219	1.428	4
PLYMOUTH	2.881	.400	3.337	2.412	.926	6
PONTIAC	3.699	1.899	6.596	1.692	4.903	5
IMPORTS	2.679	.741	3.761	1.226	2.535	12
AFTER MAINTENANCE						
GVW						
1800-2799	2.756	.961	4.603	1.415	3.189	15
2800-3799	3.095	.912	4.889	1.558	3.331	20
3800-3799	2.950	.943	5.183	1.487	3.696	35
4800-5799	4.177	1.285	5.505	2.760	2.745	5
MODEL YEAR						
1968	2.827	.820	4.285	1.538	2.747	15
1969	3.319	1.020	5.183	1.940	3.243	17
1970	3.326	.902	5.399	1.583	3.815	18
1971	2.974	1.194	5.505	1.415	4.091	15
1972	2.407	.828	4.172	1.526	2.646	10
MANUFACTURER						
AM. MOTORS	4.187	.501	4.542	3.833	.709	2
BUICK	3.267	1.283	5.183	2.455	2.728	4
CADILLAC	2.760	2.775	2.760	2.760	0.000	1
CHEVROLET	2.684	.881	4.285	1.530	2.747	14
CHRYSLER	2.323	.719	3.152	1.877	1.275	3
DODGE	3.091	1.105	4.397	1.705	2.691	4
FORD	3.129	1.047	4.603	1.415	3.189	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	4.203	4.302	4.203	4.203	0.000	1
MERCURY	3.629	1.169	4.889	2.298	2.591	4
OLDSMOBILE	2.761	.352	3.020	2.243	.776	4
PLYMOUTH	3.045	.915	4.563	2.032	2.531	6
PONTIAC	3.745	1.688	5.505	1.947	3.558	5
IMPORTS	2.714	.675	3.501	1.526	1.975	12

Table 4, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

DYNAMOMETER EMISSION RESULTS
USING 1975 FEDERAL TEST PROCEDURES

CAR #	HYDROCARBONS			CARBON MONOXIDE			OXIDES OF NITROGEN		
	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP
0001	4.88	4.11	0.77	102.2	78.1	24.1	1.45	1.58	-0.14
0002	5.08	8.30	-3.22	65.6	83.6	-18.1	3.26	2.01	1.25
0003	4.86	6.03	-1.17	65.6	78.4	-12.8	3.34	2.43	0.91
0004	6.21	5.53	0.68	86.2	54.4	31.8	4.26	4.22	0.04
0005	5.02	4.61	0.41	49.2	49.5	-0.3	2.22	1.56	0.66
0006	12.13	7.65	4.48	88.4	43.2	45.2	2.34	2.22	0.12
0007	4.21	3.23	0.98	79.7	40.6	39.1	2.41	2.64	-0.23
0008	9.21	7.41	1.80	167.5	150.1	17.4	2.51	1.58	0.93
0009	6.35	5.65	0.70	73.4	79.1	-5.7	2.66	2.04	0.62
0010	5.83	4.59	1.24	106.4	76.0	30.4	3.53	3.30	0.23
0011	8.95	3.85	5.10	100.7	59.3	41.3	1.28	1.41	-0.13
0012	4.66	3.28	1.38	105.2	54.2	51.0	4.41	3.25	1.17
0013	3.26	2.86	0.40	67.7	60.1	7.6	3.28	2.03	1.24
0014	5.21	5.22	-0.02	80.6	66.8	13.8	3.77	3.65	0.12
0015	5.21	5.84	-0.63	50.5	101.3	-50.9	3.97	2.51	1.47
0016	5.41	4.22	1.19	74.1	62.2	11.8	3.65	3.33	0.33
0017	5.16	4.49	0.67	87.1	93.3	-6.2	2.31	2.24	0.07
0018	6.54	5.61	0.94	91.9	99.4	-7.5	1.99	3.35	-1.36
0019	3.98	4.25	-0.27	53.3	51.5	1.8	4.01	4.54	-0.53
0020	6.30	5.46	0.84	119.8	127.4	-7.7	2.37	1.88	0.49
0021	3.82	4.98	-1.15	89.8	70.3	19.5	2.29	4.20	-1.91
0022	3.22	2.50	0.72	33.3	37.3	-3.9	3.76	3.16	0.60
0023	4.01	3.83	0.19	35.4	32.2	3.3	2.96	3.01	-0.05
0024	5.20	4.81	0.39	74.5	78.0	-3.5	5.03	3.43	1.61
0025	4.29	5.16	-0.87	67.8	62.0	5.8	4.09	5.40	-1.31
0026	5.29	5.04	0.25	95.2	76.1	19.1	2.22	2.85	-0.63
0027	2.80	2.34	0.46	24.2	19.1	5.1	5.89	4.60	1.29
0028	3.42	2.91	0.51	39.5	33.2	6.3	3.87	3.06	0.81
0029	2.58	2.78	-0.21	44.4	38.0	6.3	2.43	3.00	-0.58
0030	4.27	3.28	0.99	46.2	42.8	3.5	2.12	3.24	-1.12
0031	3.82	5.23	-1.41	39.1	48.0	-9.0	1.97	3.00	-1.03
0032	7.97	3.98	3.99	65.8	39.8	26.1	3.49	3.06	0.44
0033	6.15	4.20	1.95	72.0	37.4	34.6	4.90	5.18	-0.28
0034	1.59	1.33	0.26	46.7	53.9	-7.3	2.77	2.76	0.01
0035	3.96	3.41	0.55	27.6	21.8	5.9	4.33	3.52	0.81
0036	1.70	1.88	-0.18	42.4	52.1	-9.7	2.89	1.99	0.90
0037	5.05	4.85	0.19	103.0	58.7	44.2	3.72	3.83	-0.12
0038	3.93	4.15	-0.22	50.4	39.8	10.6	2.98	3.07	-0.09
0039	5.04	5.37	-0.33	75.2	64.7	10.5	2.60	3.26	-0.66
0040	3.33	3.14	0.19	38.4	35.9	2.5	4.18	4.17	0.01

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 5A, Emission Data by Car by 1975 FTP

DYNAMOMETER EMISSION RESULTS
USING 1975 FEDERAL TEST PROCEDURES

	HYDROCARBONS			CARBON MONOXIDE			OXIDES OF NITROGEN		
CAR #	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP
0041	3.94	3.83	0.11	56.6	56.8	-0.1	3.65	3.02	0.63
0042	7.63	6.50	1.13	121.4	99.9	21.5	2.88	3.60	-0.72
0043	2.76	5.58	-2.82	37.9	36.2	1.6	2.83	3.50	-0.68
0044	4.03	8.69	-4.65	29.0	90.0	-61.0	2.60	2.20	0.40
0045	2.41	2.43	-0.02	22.6	24.9	-2.2	2.86	3.01	-0.15
0046	2.41	2.20	0.21	27.1	28.6	-1.5	1.65	1.75	-0.10
0047	5.34	5.37	-0.03	37.3	42.6	-5.3	4.74	4.89	-0.15
0048	4.33	5.03	-0.70	87.7	75.0	12.8	1.46	2.30	-0.83
0049	6.74	6.51	0.23	79.8	94.5	-14.7	3.50	3.15	0.35
0050	4.60	2.50	2.10	22.5	25.3	-2.8	2.36	3.08	-0.72
0051	16.52	17.02	-0.50	86.7	98.5	-11.8	3.49	2.97	0.51
0052	5.57	5.27	0.30	36.6	33.6	3.0	3.68	3.60	0.08
0053	8.28	4.73	3.54	87.6	66.9	20.7	1.23	1.53	-0.30
0054	4.01	3.47	0.53	58.1	46.8	11.3	3.49	4.27	-0.78
0055	4.14	3.85	0.30	35.4	35.6	-0.2	6.60	5.51	1.09
0056	3.82	2.90	0.92	78.8	44.0	34.8	2.20	2.45	-0.26
0057	5.07	3.72	1.35	90.0	40.2	49.9	2.96	2.62	0.34
0058	5.53	4.42	1.11	125.9	105.0	20.9	2.46	2.93	-0.47
0059	6.74	5.34	1.40	86.5	86.7	-0.2	1.69	1.95	-0.25
0060	4.08	2.73	1.36	52.2	37.3	14.9	4.55	4.40	0.15
0061	5.51	5.18	0.34	82.4	86.8	-4.4	2.33	2.73	-0.40
0062	4.54	2.99	1.55	44.0	44.6	-0.6	3.39	3.29	0.09
0063	6.66	6.73	-0.07	110.3	87.2	23.2	1.44	1.94	-0.50
0064	2.96	3.08	-0.12	26.1	27.4	-1.3	3.67	4.17	-0.50
0065	4.72	3.51	1.21	57.9	42.0	15.9	3.36	3.47	-0.11
0066	4.58	4.56	0.02	75.4	61.5	13.9	2.42	4.56	-2.14
0067	6.27	5.71	0.56	144.0	130.3	13.7	1.67	1.49	0.18
0068	12.02	11.82	0.20	109.8	86.1	23.8	3.09	3.90	-0.81
0069	5.97	4.03	1.94	84.9	68.3	16.7	3.02	2.72	0.30
0070	3.69	3.03	0.66	42.7	47.5	-4.8	1.82	1.71	0.11
0071	15.56	12.40	3.16	194.2	197.0	-2.8	1.30	1.54	-0.24
0072	30.14	4.28	25.86	81.7	69.9	11.8	3.69	2.57	1.12
0073	7.92	6.27	1.65	67.9	59.6	8.3	5.26	4.28	0.98
0074	4.42	4.29	0.13	73.3	66.8	6.6	2.81	2.92	0.80
0075	4.60	4.35	0.25	103.6	83.1	20.5	2.46	2.71	-0.25
MEAN	5.70	4.82	0.88	71.79	63.68	8.1	3.07	3.03	0.04
PERCENT			15.44			11.3			1.30
STD. DEV.	3.88	2.39		33.56	30.99		1.09	1.00	
MAXIMUM	30.14	17.02		194.24	197.00		6.60	5.50	
MINIMUM	1.59	1.33		22.47	19.09		1.23	1.42	
RANGE	28.55	15.69		171.77	177.91		5.37	4.09	
COMPUTED T	-2.33			-3.67			-0.428		

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 5B, Emission Data by Car by 1975 FTP

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(CONCENTRATION)

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0001	3754	3895	-141	3.38	3.48	-0.10	413	636	-223
0002	4147	4049	98	2.70	3.22	-0.52	713	487	225
0003	3172	3013	159	1.43	2.10	-0.67	830	460	370
0004	4430	3322	1107	2.27	0.93	1.34	948	1019	-71
0005	3370	2928	442	1.31	1.50	-0.19	512	358	154
0006	3892	1577	2315	1.75	0.17	1.58	761	615	146
0007	2675	2295	380	1.80	0.94	0.85	611	668	-56
0008	5461	3631	1829	3.90	3.68	0.22	478	294	184
0009	2670	3322	-652	0.76	1.39	-0.62	455	572	-116
0010	3933	3046	887	3.13	2.09	1.04	863	818	45
0011	7350	4412	2938	4.37	1.79	2.58	364	549	-185
0012	2864	2215	648	2.46	1.20	1.26	832	713	118
0013	2715	2230	484	1.73	1.65	0.08	829	427	401
0014	2646	2598	48	0.92	0.57	0.34	1045	1122	-77
0015	3336	4037	-701	0.80	2.47	-1.67	895	593	302
0016	3215	3058	156	1.89	2.12	-0.23	908	918	-9
0017	2124	2124	-0	0.94	1.08	-0.14	490	479	11
0018	2859	1808	1051	2.63	2.15	0.49	328	532	-203
0019	3117	3748	-630	1.89	1.76	0.13	1019	1170	-150
0020	3635	4001	-366	2.88	4.11	-1.22	698	410	288
0021	1325	3165	-1839	1.39	1.87	-0.49	299	643	-344
0022	2245	1203	1041	0.71	0.82	-0.10	647	416	231
0023	3267	3057	210	0.96	1.06	-0.10	641	560	81
0024	3555	3136	419	2.03	1.79	0.24	1187	898	289
0025	1999	2700	-701	1.11	1.04	0.07	784	1249	-465
0026	3067	3695	-627	2.42	1.96	0.46	620	774	-154
0027	2927	2615	312	0.95	0.78	0.16	1031	980	50
0028	2384	1941	443	1.05	0.82	0.23	1089	818	270
0029	1767	1881	-113	1.11	1.16	-0.05	885	1187	-301
0030	3997	2307	1690	1.39	0.68	0.71	512	787	-274
0031	3674	4244	-570	2.22	1.73	0.48	561	916	-355
0032	3590	3321	268	1.93	1.48	0.45	909	806	102
0033	3260	2422	838	1.43	0.63	0.79	1206	1470	-263
0034	697	613	83	1.00	1.37	-0.37	399	345	53
0035	3282	3282	0	0.70	0.76	-0.06	1293	956	336
0036	1152	1223	-71	1.22	1.24	-0.02	487	394	92
0037	3221	3216	4	1.79	1.19	0.61	1244	1108	135
0038	2412	2926	-514	0.94	1.13	-0.19	596	675	-79
0039	3157	3458	-301	2.37	2.53	-0.16	801	905	-103
0040	2298	2179	119	1.16	0.92	0.24	973	895	77

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 6A, Emission Data by Car by CKMC

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(CONCENTRATION)

CAR #	HYDROCARBONS BEFOR	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0041	1761	1059	702	0.55	0.43	0.11	655	480	174
0042	3113	3060	52	1.49	1.28	0.21	1056	1130	-74
0043	1002	1772	-770	0.48	0.55	-0.07	478	591	-112
0044	2732	4541	-1809	1.15	3.60	-2.46	547	423	123
0045	1444	1069	375	0.17	0.17	-0.00	829	714	114
0046	3339	3045	294	0.81	1.07	-0.26	594	741	-147
0047	3953	3630	323	0.48	0.64	-0.17	1290	1533	-243
0048	3453	3900	-446	2.81	2.35	0.46	448	599	-150
0049	3972	3973	-1	2.75	3.21	-0.47	738	518	220
0050	2932	2808	124	0.60	0.82	-0.22	741	783	-41
0051	9255	8743	511	4.63	5.17	-0.54	800	562	238
0052	3794	4609	-814	0.66	1.01	-0.35	896	898	-1
0053	8009	4098	3910	4.64	3.47	1.17	291	359	-68
0054	2216	1949	266	0.87	0.58	0.29	1103	1109	-6
0055	2888	2336	552	0.86	0.54	0.32	1289	1194	95
0056	2519	1890	628	1.67	0.65	1.02	594	614	-20
0057	3398	2464	933	2.18	0.49	1.69	1039	964	74
0058	3125	2725	400	3.18	2.55	0.63	586	665	-79
0059	3360	3151	209	2.02	2.17	-0.15	609	633	-23
0060	2901	2609	292	1.87	1.91	-0.03	1320	1121	198
0061	3297	3105	192	1.45	1.52	-0.07	593	797	-204
0062	1782	2143	-361	1.48	1.27	0.21	735	926	-190
0063	4114	3998	115	4.60	4.09	0.51	392	378	14
0064	2642	2914	-272	1.09	1.21	-0.12	694	864	-170
0065	3045	3114	-68	2.12	1.99	0.13	960	1051	-91
0066	2736	2986	-250	2.42	1.83	0.59	690	1070	-380
0067	4456	3752	704	5.54	4.28	1.26	501	376	125
0068	7206	7483	-276	2.79	2.47	0.32	967	1152	-184
0069	2700	2334	366	1.77	1.34	0.44	982	984	-1
0070	3651	2608	1042	3.18	3.44	-0.26	580	593	-13
0071	5492	5043	449	4.97	4.61	0.35	589	678	-88
0072	14079	1793	12285	1.44	1.28	0.16	838	523	314
0073	5690	4792	898	2.05	1.71	0.34	1325	1179	145
0074	3160	2230	929	2.67	2.00	0.67	1103	867	235
0075	2649	2974	-325	1.53	1.41	0.11	717	697	20
MEAN	3474	3048	426	1.92	1.74	0.18	770	766	4
PERCENT			12.3			9.4			0.05
STD. DEV.	1910	1262		1.17	1.12		271	284	
MAXIMUM	14079	8744		5.54	5.17		1325	1534	
MINIMUM	697	614		0.17	0.17		291	294	
RANGE	13382	8130		5.37	5.00		1033	1239	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 6B, Emission Data by Car by CKMC

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(MASS)

CAR #	HYDROCARBONS BEFORE	HYDROCARBONS AFTER	HYDROCARBONS IMP	CARBON MONOXIDE BEFORE	CARBON MONOXIDE AFTER	CARBON MONOXIDE IMP	OXIDES OF NITROGEN BEFORE	OXIDES OF NITROGEN AFTER	OXIDES OF NITROGEN IMP
0001	3.19	2.06	1.13	29.1	32.7	-3.6	1.56	1.73	-0.17
0002	2.54	2.15	0.39	23.0	29.3	-6.2	2.11	1.34	0.77
0003	1.32	1.44	-0.11	19.9	23.2	-3.2	2.13	1.32	0.81
0004	2.39	1.81	0.58	27.3	16.0	11.3	3.11	2.95	0.16
0005	1.19	1.36	-0.17	10.7	13.8	-3.2	1.11	1.06	0.06
0006	1.64	0.95	0.69	18.6	2.6	16.1	2.09	2.76	-0.67
0007	1.33	1.10	0.23	23.9	11.5	12.4	1.76	1.73	0.04
0008	3.33	2.14	1.19	61.3	50.1	11.2	1.58	1.18	0.40
0009	1.25	1.39	-0.14	9.1	18.8	-9.8	1.68	1.90	-0.22
0010	1.77	1.44	0.33	35.4	23.6	11.9	2.20	2.10	0.09
0011	1.65	1.20	0.45	45.3	16.4	28.9	0.87	1.10	-0.24
0012	1.53	1.27	0.27	39.7	18.6	21.0	2.72	2.01	0.70
0013	1.33	1.16	0.17	39.0	25.3	13.7	2.35	1.22	1.13
0014	1.55	1.46	0.09	13.8	9.5	4.3	3.08	3.33	-0.25
0015	1.83	2.13	-0.31	11.3	31.2	-20.0	3.16	1.96	1.20
0016	1.58	1.53	0.06	19.7	22.9	-3.3	2.53	2.29	0.24
0017	1.29	1.35	-0.06	13.4	14.4	-1.0	2.00	1.82	0.18
0018	2.02	1.53	0.49	38.3	38.8	-0.5	1.44	1.86	-0.41
0019	1.23	1.79	-0.56	17.3	17.1	0.2	2.50	2.67	-0.17
0020	2.04	2.21	-0.17	39.9	52.3	-12.4	2.13	1.31	0.82
0021	1.01	1.94	-0.93	21.4	27.0	-5.6	1.24	2.57	-1.33
0022	0.89	0.37	0.52	6.7	7.4	-0.7	1.91	1.18	0.73
0023	1.41	1.62	-0.21	10.2	13.9	-3.7	1.96	1.65	0.32
0024	1.82	1.50	0.32	24.0	22.0	2.0	3.54	2.76	0.78
0025	1.01	1.54	-0.53	14.7	12.4	2.3	2.41	3.64	-1.23
0026	1.75	1.50	0.24	27.9	17.8	10.0	1.88	2.14	-0.25
0027	1.04	0.72	0.33	8.7	6.4	2.3	2.63	2.48	0.15
0028	0.99	0.84	0.15	7.8	8.1	-0.3	2.68	2.00	0.68
0029	0.50	0.54	-0.04	7.7	7.9	-0.3	1.77	2.15	-0.38
0030	0.96	0.81	0.15	9.8	7.5	2.2	1.27	1.91	-0.64
0031	1.81	2.03	-0.23	22.9	16.1	6.8	1.22	2.26	-1.04
0032	1.89	1.70	0.18	21.7	15.4	6.2	2.73	2.47	0.27
0033	1.77	1.06	0.70	18.4	9.8	8.7	4.42	4.78	-0.36
0034	0.66	0.59	0.07	23.3	33.6	-10.3	2.07	1.70	0.37
0035	1.57	1.66	-0.10	9.1	10.5	-1.5	3.50	2.86	0.64
0036	0.79	0.78	0.01	25.2	24.9	0.3	2.19	1.82	0.38
0037	1.80	1.72	0.08	28.7	19.3	9.4	3.14	3.29	-0.15
0038	1.22	1.65	-0.44	14.5	18.0	-3.5	2.02	2.35	-0.33
0039	1.52	1.61	-0.08	23.9	24.6	-0.7	2.02	2.19	-0.17
0040	1.33	1.26	0.07	19.9	15.8	4.1	3.46	3.04	0.43

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 7A, Emission Data by Car by CKMM

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(MASS)

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0041	1.09	0.79	0.30	10.5	9.9	0.6	2.68	1.93	0.75
0042	1.66	1.44	0.21	17.5	14.2	3.3	3.10	3.28	-0.18
0043	0.41	0.67	-0.27	4.3	4.6	-0.3	1.41	1.49	-0.08
0044	0.93	1.28	-0.36	8.9	26.2	-17.4	1.31	0.71	0.60
0045	0.48	0.47	0.00	0.9	1.0	-0.1	2.15	1.71	0.45
0046	0.73	0.77	-0.04	5.8	7.3	-1.5	1.10	1.48	-0.38
0047	2.15	1.69	0.46	6.1	7.3	-1.2	3.63	4.16	-0.53
0048	1.36	1.60	-0.24	32.9	27.6	5.2	1.24	1.60	-0.37
0049	2.25	2.30	-0.05	34.9	44.4	-9.5	2.42	1.64	0.78
0050	1.05	0.79	0.25	4.1	6.5	-2.4	1.55	1.97	-0.42
0051	6.73	6.04	0.69	39.3	51.5	-12.2	1.75	1.35	0.40
0052	1.87	2.16	-0.29	8.3	14.5	-6.2	2.66	2.50	0.16
0053	3.37	1.30	2.07	38.3	28.7	9.6	0.71	0.88	-0.17
0054	1.01	1.26	-0.26	12.4	9.0	3.4	3.58	3.57	0.01
0055	1.78	1.56	0.22	13.1	10.2	2.9	4.95	4.48	0.47
0056	1.22	0.96	0.25	20.2	7.4	12.8	2.01	2.10	-0.09
0057	1.58	1.26	0.32	26.6	5.5	21.0	2.76	2.53	0.23
0058	1.80	1.50	0.31	46.2	33.1	13.1	2.32	2.17	0.14
0059	1.87	1.82	0.05	22.0	26.2	-4.3	1.64	1.00	0.63
0060	1.26	1.12	0.14	18.5	16.8	1.6	2.92	2.51	0.41
0061	1.82	1.82	0.00	24.0	21.9	2.1	2.09	2.52	-0.43
0062	1.00	1.42	-0.42	21.0	16.6	4.5	1.83	2.73	-0.90
0063	3.06	1.91	1.15	46.6	46.9	-0.3	1.06	1.10	-0.04
0064	0.98	0.94	0.04	9.7	8.7	1.0	1.81	2.08	-0.28
0065	1.08	0.80	0.29	16.8	15.5	1.4	2.07	2.23	-0.16
0066	1.59	2.16	-0.56	33.1	25.5	7.6	2.10	2.71	-0.61
0067	2.27	1.84	0.43	56.7	38.7	18.1	1.25	0.89	0.36
0068	4.57	4.48	0.08	37.9	32.3	5.6	2.65	3.25	-0.60
0069	0.76	0.77	-0.01	13.4	11.2	2.1	1.59	1.50	0.09
0070	0.91	0.77	0.13	12.4	11.3	1.1	1.17	1.35	-0.18
0071	2.90	2.85	0.05	47.9	44.3	3.6	1.75	1.74	0.01
0072	11.20	0.80	10.40	25.7	20.9	4.8	3.61	2.20	1.41
0073	2.28	2.75	-0.46	21.7	19.2	2.5	3.82	3.40	0.42
0074	0.85	0.74	0 11	16.0	12.2	3.7	2.40	2.13	0.27
0075	1.60	1.67	-0.06	26.2	21.5	4.7	2.57	2.24	0.33
MEAN	1.78	1.51	0.27	22.16	19.81	2.35	2.24	2.16	0.08
PERCENT			15.17			10.60			3.57
STD. DEV.	1.45	0.83		12.08	12.06		0.84	0.84	
MAXIMUM	11.20	6.04		61.29	52.35		4.94	4.78	
MINIMUM	0.41	0.37		0.92	1.03		0.71	0.70	
RANGE	10.79	5.67		60.37	51.31		4.24	4.08	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 7B, Emission Data by Car by CKMM

IDLE CONCENTRATION

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0001	3477	4169	-692	4.02	3.75	0.27	104	108	-4
0002	4462	2854	1627	2.43	0.88	1.55	88	196	-108
0003	3647	4169	-521	1.26	3.06	-1.80	102	75	26
0004	9036	3578	5458	6.41	1.10	5.31	64	173	-109
0005	6324	4899	1425	3.75	3.70	0.04	51	55	-4
0006	7645	1428	6217	5.56	0.15	5.41	34	34	-0
0007	4864	2332	2531	6.30	0.94	5.36	63	78	-15
0008	13903	6533	7370	8.37	7.88	0.49	54	60	-6
0009	8688	8688	0	2.74	4.39	-1.65	42	60	-18
0010	5907	2889	3018	5.93	2.83	3.09	96	157	-61
0011	17206	4725	12480	8.47	3.06	5.41	9	79	-69
0012	4516	2541	1975	6.41	2.74	3.67	85	106	-21
0013	4064	2889	1175	5.26	4.29	0.97	83	77	6
0014	3578	2743	834	2.70	0.88	1.82	105	162	-57
0015	3056	5559	-2503	0.52	6.09	-5.57	108	77	31
0016	3306	3028	278	1.23	1.81	-0.58	74	119	-44
0017	2106	1706	400	0.09	0.10	-0.02	54	109	-55
0018	8862	3821	5040	4.59	3.23	1.36	53	181	-128
0019	4134	5733	-1599	3.18	0.55	2.63	121	279	-158
0020	3821	4169	-347	4.79	6.14	-1.35	81	69	11
0021	2889	3995	-1106	2.62	2.86	-0.24	103	88	15
0022	2778	1713	1064	0.11	1.82	-1.71	203	109	94
0023	3404	2228	1175	0.70	0.16	0.54	119	164	-45
0024	5246	1776	3470	5.16	1.14	4.02	96	137	-41
0025	5733	6880	-1147	5.01	3.88	1.13	109	196	-87
0026	1109	3473	-2364	5.16	2.60	2.56	62	76	-14
0027	3508	2732	775	4.14	3.57	0.56	95	102	-7
0028	4864	3682	1181	4.91	3.15	1.77	80	79	1
0029	2503	2854	-351	2.50	2.35	0.15	73	67	5
0030	10774	1351	9422	2.90	0.40	2.50	43	69	-25
0031	2118	2848	-730	0.69	0.35	0.34	210	188	21
0032	3473	1480	1993	2.90	0.49	2.41	113	239	-126
0033	6324	2002	4322	5.46	0.73	4.73	74	318	-244
0034	1358	1393	-34	2.66	3.23	-0.57	58	60	-1
0035	3543	3271	271	2.95	2.66	0.29	144	129	15
0036	1584	1324	260	3.33	2.82	0.51	48	56	-7
0037	3543	2784	758	5.06	1.56	3.50	114	216	-102
0038	1741	2367	-626	0.35	0.20	0.15	153	145	7
0039	2245	2465	-219	0.55	0.31	0.25	146	151	-4
0040	2819	1671	1147	2.90	0.76	2.14	102	192	-89

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 8A, Emission Data by Car by IC

IDLE CONCENTRATION

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0041	2426	2228	198	1.03	1.01	0.02	60	82	-22
0042	2562	2489	73	0.99	0.65	0.34	110	87	22
0043	1007	976	31	0.86	0.37	0.49	46	58	-12
0044	3473	8758	-5284	2.82	6.99	-4.18	59	45	14
0045	2419	1685	733	0.21	0.21	0.00	61	67	-6
0046	3376	3473	-97	1.13	1.49	-0.36	81	78	3
0047	4864	2645	2218	0.21	0.18	0.03	105	149	-43
0048	1393	3237	-1843	2.24	0.41	1.82	56	240	-183
0049	4238	4169	69	3.40	4.06	-0.66	51	67	-15
0050	4343	2670	1672	0.16	1.42	-1.27	94	116	-21
0051	29965	25862	4102	8.47	8.47	0.00	22	44	-22
0052	1497	3126	-1628	0.43	1.61	-1.18	163	136	26
0053	23637	5212	18425	8.47	6.17	2.30	44	63	-19
0054	2750	2054	695	1.91	0.92	0.98	100	184	-83
0055	3508	2958	549	3.10	1.94	1.17	103	97	6
0056	4273	1532	2740	5.68	0.51	5.16	61	120	-58
0057	5559	1727	3832	7.13	0.11	7.02	82	195	-112
0058	4343	2437	1905	6.07	2.67	3.39	72	117	-44
0059	2952	2297	654	0.48	0.61	-0.13	121	214	-93
0060	3126	1821	1304	0.98	0.09	0.89	232	200	31
0061	2152	2402	-249	0.13	0.66	-0.52	111	157	-46
0062	1463	2141	-678	0.12	0.41	-0.30	807	315	491
0063	3752	3126	625	3.70	1.62	2.08	75	88	-12
0064	1828	3125	-1297	0.08	0.18	-0.10	108	478	-369
0065	3960	3995	-34	3.57	3.40	0.17	111	125	-14
0066	2784	2750	34	3.42	2.09	1.33	64	62	2
0067	5038	2778	2259	6.79	2.94	3.85	78	98	-19
0068	22594	24054	-1460	8.47	8.47	0.00	42	38	4
0069	4099	2124	1975	4.29	2.26	2.03	74	49	25
0070	11330	5177	6153	7.39	5.69	1.71	60	53	6
0071	7680	6081	1599	5.50	3.02	2.48	151	438	-287
0072	17588	3132	14455	4.96	3.10	1.86	48	40	8
0073	10774	4725	6049	5.02	0.17	4.85	69	279	-210
0074	7819	3612	4206	7.07	3.23	3.84	21	77	-56
0075	3202	2778	423	3.15	1.49	1.65	125	164	-39
MEAN	5493	3788	1705	3.51	2.28	1.23	97	131	-34
PERCENT			31.04			35.04			-35.05
STD. DEV.	5296	3862		2.49	2.08		93	87	
MAXIMUM	29965	25863		8.47	8.47		808	478	
MINIMUM	1007	976		0.08	0.09		10	35	
RANGE	28958	24887		8.39	8.38		798	443	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 8B, Emission Data by Car by IC

Analysis	**HC Before (g/m)**	**HC After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	5.70	4.82	0.88	15.40
Standard Deviation	3.88	2.39		
Maximum	30.14	17.02		
Minimum	1.59	1.33		
Range	28.55	15.69		
Computed T Value	-2.33			

Analysis	**CO Before (g/m)**	**CO After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	71.79	63.68	8.10	11.30
Standard Deviation	33.56	30.99		
Maximum	194.24	197.00		
Minimum	22.47	19.08		
Range	171.77	177.91		
Computed T Value	-3.67			

Analysis	**NO_x Before (g/m)**	**NO_x After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	3.07	3.03	0.04	1.30
Standard Deviation	1.09	1.00		
Maximum	6.60	5.50		
Minimum	1.23	1.42		
Range	5.37	4.09		
Computed T Value	-0.42			

For a decrease (single-ended test), $t_{0.99} = -2.326$

given d.f = ∞ (Reference 9)

Table 9A, Analysis of 1975 FTP Emission Data

Analysis	HC Before	HC After	Improvement	
	(g/m)	(g/m)	(g/m)	(%)
Mean	1.78	1.51	0.27	15.17
Standard Deviation	1.45	0.83		
Maximum	11.20	6.04		
Minimum	0.41	0.37		
Range	10.79	5.67		

Analysis	CO Before	CO After	Improvement	
	(g/m)	(g/m)	(g/m)	(%)
Mean	22.16	19.81	2.35	10.60
Standard Deviation	13.08	12.08		
Maximum	61.29	52.35		
Minimum	0.92	1.03		
Range	60.37	51.31		

Analysis	NO$_x$ Before	NO$_x$ After	Improvement	
	(g/m)	(g/m)	(g/m)	(%)
Mean	2.24	2.16	0.08	3.57
Standard Deviation	0.84	0.84		
Maximum	4.94	4.78		
Minimum	0.71	0.70		
Range	4.24	4.08		

Table 9B, Analysis of Key Mode Mass Emission Data

Analysis	HC Before (ppm Carbon)	HC After (ppm Carbon)	Improvement	
			(ppmC)	(%)
Mean	3474	3048	426	12.30
Standard Deviation	1910	1262		
Maximum	14079	8744		
Minimum	697	614		
Range	13382	8130		

Analysis	CO Before (mole %)	CO After (mole %)	Improvement	
			(mole%)	(%)
Mean	1.92	1.74	0.18	9.40
Standard Deviation	1.17	1.12		
Maximum	5.54	5.17		
Minimum	0.17	0.17		
Range	5.37	5.00		

Analysis	NO$_x$ Before (ppm)	NO$_x$ After (ppm)	Improvement	
			(ppm)	(%)
Mean	770	766	4	0.05
Standard Deviation	271	284		
Maximum	1325	1534		
Minimum	291	294		
Range	1033	1239		

Table 9C, Analysis of Key Mode Concentration Emission Data

Analysis	HC Before	HC After	Improvement	
	(ppm Carbon)	(ppm Carbon)	(ppmC)	(%)
Mean	5493	3788	1705	31.04
Standard Deviation	5296	3862		
Maximum	29965	25863		
Minimum	1007	976		
Range	28958	24887		

Analysis	CO Before	CO After	Improvement	
	(mole %)	(mole %)	(mole%)	(%)
Mean	3.51	2.28	1.23	35.04
Standard Deviation	2.49	2.08		
Maximum	8.47	8.47		
Minimum	0.08	0.09		
Range	8.39	8.38		

Analysis	NO_x Before	NOx After	Improvement	
	(ppm)	(ppm)	(ppm)	(%)
Mean	97	131	-34	-35.05
Standard Deviation	93	87		
Maximum	808	478		
Minimum	10	35		
Range	798	443		

Table 9D, Analysis of Idle Concentration Emission Data

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                                        TEST NUMBER: F0019
                                        CAR NUMBER:  0001

                                        BEFORE


                 DYNAMOMETER EMISSION RESULTS USING
                   1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODMR INRT RCHP A/C EVF EXH PCV TRANS
1970 CHEV  CHEVE  8  350  2  37585 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE            HC        CO       CO2       NOX       MPG

1975 COMPOSITE           4.88     102.24    453.5      1.45     14.14

SIMULATED 1972 COLD      5.60     109.21    463.6      1.37     13.64

SIMULATED 1972 HOT       4.34      56.58    446.6      1.50     14.53

COLD TRANSIENT  GRAMS   25.03     405.15   1550.8      5.73     14.09

COLD STABILIZED GRAMS   16.59     413.56   1886.1      4.53     13.24

HOT  TRANSIENT  GRAMS   15.58     313.39   1463.5      6.74     16.21

HOT  STABILIZED GRAMS   15.20     285.09   1576.5      6.25     12.86

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                 ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO       CO2      NOX       MPG


HIGH CRUISE 48  CONC     3925      3.93    12.27     1106

                MASS     4.08     63.79   482.19     4.24     14.56

LOW  CRUISE 30  CONC     3080      0.59    14.23      581

                MASS     5.78      9.11   351.28     3.17     23.20

IDLE         0  CONC     3477      4.02    12.19      104

                MASS     2.46     18.87    55.18     0.10      0.00

COMPOSITE   28  CONC     3754      3.38               413

                MASS     3.19     29.07               1.56

            AUTOMOTIVE TESTING LABORATORIES, INC.
            19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: 00026
                                                  CAR NUMBER:  0001

                                                  AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL CODEPR INRT RCHP A/C EVP EXH PCV TRANS
 1970 CHEV  CHEVE  8  350  2  37607 3500 11.2  N   N  EM   Y    A

 GRAMS PER MILE           HC       CO      CO2      NOX       MPG

 1975 COMPOSITE          4.11    78.11    440.3     1.58     15.46

 SIMULATED 1972 COLD     4.80    89.60    446.5     1.54     14.77

 SIMULATED 1972 HOT      3.59    65.43    435.4     1.62     16.02

 COLD TRANSIENT  GRAMS  21.20   405.00   1513.3     5.54     14.66

 COLD STABILIZED GRAMS  14.81   267.03   1838.5     5.59     14.88

 HOT  TRANSIENT  GRAMS  12.10   253.72   1426.9     6.55     17.44

 HOT  STABILIZED GRAMS  15.33   286.43   1655.7     5.49     14.54
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                    ANALYSIS OF KEY-MODE EMISSIONS

            SPEED         HC       CO      CO2      NOX       MPG

 HIGH CRUISE 45  CONC    3821     3.79    12.40     1203

                 MASS    4.18    64.56   471.92     4.45     15.18

 LOW  CRUISE 30  CONC    3525     2.74    13.00     1318

                 MASS    3.68    56.91   407.50     3.54     17.51

 IDLE         0  CONC    4169     3.75    12.32      108

                 MASS    0.95    15.96    87.71     0.08      0.00

 COMPOSITE   25  CONC    3855     3.48               636

                 MASS    2.06    32.66              1.73

                AUTOMOTIVE TESTING LABORATORIES, INC.
                15900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 0020
                                              CAR NUMBER:  0002

                                              BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

         YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
         1970 FORD  LTD    8  429  4  47496 4000 12.0  Y   N  EM   Y    A

         GRAMS PER MILE            HC        CO       CO2      NOX       MPG

         1975 COMPOSITE           5.09      65.58    584.4     3.26     12.66

         SIMULATED 1972 COLD      5.97      98.56    606.7     3.15     11.38

         SIMULATED 1972 HOT       4.41      40.69    566.1     3.34     13.83

         COLD TRANSIENT  GRAMS   29.44    622.36   2162.7    12.12     10.05

         COLD STABILIZED GRAMS   15.36    116.88   2402.6    11.47     13.01

         HOT  TRANSIENT  GRAMS   17.71    188.29   1843.3    13.58     14.81

         HOT  STABILIZED GRAMS   14.45     94.96   2293.4    11.11     13.78
         * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                           ANALYSIS OF KEY-MODE EMISSIONS

                      SPEED        HC        CO       CO2      NOX       MPG

         HIGH CRUISE 49  CONC     4238      3.31     14.44     1434

                         MASS     6.52     60.19    543.22     5.55     13.53

         LOW  CRUISE 33  CONC     2958      0.65     16.32     1473

                         MASS     3.10     16.32    450.74     4.81     16.52

         IDLE         0  CONC     4482      2.43     15.09       88

                         MASS     0.80      9.58     72.62     0.05      0.00

         COMPOSITE   27  CONC     4147      2.70                713

                         MASS     2.54     23.02               2.11

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                      19900 E. COLFAX, AURORA, COLO. 80011
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                                                    TEST NUMBER: EC027
                                                    CAR NUMBER:  0002

                                                    AFTER


                       DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMPR INRT RCHP A/C EVP EXH PCV TRANS
1970 FORD  LTD    8  429  4  47517 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO      CO2       NOX        MPG

1975 COMPOSITE             8.30    83.64    614.5   [illegible].01      11.93

SIMULATED 1972 COLD       13.59   107.14    623.2      1.91      10.67
SIMULATED 1972 HOT         4.32    65.91    608.0      2.08      12.28

COLD TRANSIENT  GRAMS     85.99   593.53   2013.8      6.56      10.10
COLD STABILIZED GRAMS     15.93   210.09   2659.9      7.73      11.28
HOT  TRANSIENT  GRAMS     16.44   284.24   1899.5      7.88      13.59
HOT  STABILIZED GRAMS     14.77   164.57   2609.3      8.20      11.76
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                       ANALYSIS OF KEY-MODE EMISSIONS

                SPEED       HC       CO      CO2       NOX        MPG

HIGH CRUISE 49  CONC       4516     4.48    12.13       884
                MASS       5.11    91.97   473.86      3.52      14.03

LOW  CRUISE 33  CONC       2958     0.98    14.44       855
                MASS       2.75    21.99   432.41      2.99      16.75

IDLE         0  CONC       2854     0.88    14.44       196
                MASS       0.83     5.95   118.97      0.17       0.00

COMPOSITE   27  CONC       4049     3.22                487
                MASS       2.15    29.26               1.34

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 00024
                                              CAR NUMBER:  0003

                                              BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

     YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
     1965 PLYM  FURY3  8  318  2  59290 4000 12.0  Y   N  EM   Y    A

     GRAMS PER MILE            HC       CO      CO2      NOX       MPG

     1975 COMPOSITE           4.86    65.62    522.1    3.34     13.90

     SIMULATED 1972 COLD      6.33    86.02    524.2    3.16     13.11
     SIMULATED 1972 HOT       3.75    50.24    520.6    3.47     14.57

     COLD TRANSIENT  GRAMS   32.61   448.99   1774.2   12.04     12.59
     COLD STABILIZED GRAMS   14.90   196.15   2157.2   11.63     13.65
     HOT  TRANSIENT  GRAMS   13.23   180.63   1747.1   14.42     15.68
     HOT  STABILIZED GRAMS   15.06   193.87   2118.2   11.22     13.88
     * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                         ANALYSIS OF KEY-MODE EMISSIONS
                 SPEED         HC        CO      CO2      NOX       MPG

     HIGH CRUISE 49  CONC     3056      1.70    13.85     1859
                     MASS     2.79     44.83   474.74     6.20     16.07

     LOW  CRUISE 33  CONC     3132      0.75    14.74     1565
                     MASS     2.43     16.52   352.66     4.05     20.89

     IDLE         0  CONC     3647      1.26    13.45      102
                     MASS     0.56     10.73    80.67     0.05      0.00

     COMPOSITE   27  CONC     3172      1.43               830
                     MASS     1.32     19.52               2.13

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                   19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: EC032
                                            CAR NUMBER:  0003

                                            AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1965 PLYM  FURY3  8  318  2  59259 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX       MPG

1975 COMPOSITE            6.03     78.44   525.0     2.43     13.34

SIMULATED 1972 COLD       8.66     95.65   536.4     2.34     12.36

SIMULATED 1972 HOT        4.04     62.43   516.4     2.50     14.20

COLD TRANSIENT  GRAMS    48.73    518.22  1776.2     7.96     11.84

COLD STABILIZED GRAMS    16.25    229.15  2246.7     9.58     12.90

HOT  TRANSIENT  GRAMS    14.08    239.11  1626.2     9.14     15.85

HOT  STABILIZED GRAMS    16.03    267.26  2085.0     8.58     13.42

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                    ANALYSIS OF KEY-MODE EMISSIONS

              SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC       2715     2.09    13.65     1222

                MASS       2.88    52.17   490.29     4.32     15.32

LOW  CRUISE 33  CONC       3028     1.56    13.85      720

                MASS       2.47    30.64   360.24     1.82     21.40

IDLE         0  CONC       4169     3.06    12.72       75

                MASS       0.69    10.49    66.96     0.05      0.00

COMPOSITE   27  CONC       3013     2.10               460

                MASS       1.44    23.17              1.32

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               13900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0025
                                                CAR NUMBER:  0004

                                                BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 FORD  LTD    8  429  4  33441 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE             HC        CO      CO2      NOX       MPG

1975 COMPOSITE            6.21     86.20    538.8     4.26     12.83

SIMULATED 1972 COLD       6.72     92.29    555.9     4.11     12.33

SIMULATED 1972 HOT        5.84     81.60    526.0     4.38     13.24

COLD TRANSIENT  GRAMS   26.23    319.03   1967.5    17.71     12.74

COLD STABILIZED GRAMS   24.14    373.14   2201.6    13.13     11.57

HOT  TRANSIENT  GRAMS   19.63    238.86   1743.1    19.69     14.91

HOT  STABILIZED GRAMS   21.34    309.62   2152.1    13.06     12.67
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                        ANALYSIS OF KEY-MODE EMISSIONS
           SPEED            HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC      3369       1.49    14.95     2518

                MASS      4.08      41.77   549.65    10.18      14.18

LOW  CRUISE 33  CONC      3647       1.09    15.36     1628

                MASS      3.46      28.47   446.37     4.40      17.74

IDLE         0  CONC      9036       6.41    11.79       64

                MASS      1.53      21.35    61.94     0.08       0.00

COMPOSITE   27  CONC      4430       2.27               948

                MASS      2.39      27.26              3.11

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC031
                                        CAR NUMBER:  0004

                                        AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 FORD  LTD    8  429  4  33461 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE            HC        CO       CO2      NOX        MPG

1975 COMPOSITE            5.53     54.38    611.7     4.22      12.46

SIMULATED 1972 COLD       5.64     66.50    630.1     4.20      11.83

SIMULATED 1972 HOT        5.45     45.24    597.8     4.24      12.98

COLD TRANSIENT  GRAMS   23.64    292.89  2158.9    18.54      11.89

COLD STABILIZED GRAMS   18.67    205.83  2527.0    12.54      11.78

HOT  TRANSIENT  GRAMS   22.20    133.45  1956.3    10.82      14.54

HOT  STABILIZED GRAMS   16.84    138.37  2466.4    13.45      12.53
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                       ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC        CO       CO2      NOX        MPG

HIGH CRUISE 49  CONC     3300      1.07    13.79     2788

                MASS     3.77     38.71   483.83     9.53      16.00

LOW  CRUISE 33  CONC     3035      0.22    14.00     1531

                MASS     2.80     16.34   421.28     4.13      15.54

IDLE         0  CONC     3578      1.10    13.55      173

                MASS     0.85      7.01   113.12     0.14       0.00

COMPOSITE   27  CONC     3322      0.93              1019

                MASS     1.81     16.00              2.59

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: E0029
                                          CAR NUMBER:  C005

                                          BEFORE


                     DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 CHEV  CAMER  8  307  2   7879 3500 11.2  N   Y   AI  Y   S-3

GRAMS PER MILE          HC      CO      CO2     NOX      MPG

1975 COMPOSITE          5.02    49.21   445.8   2.22     16.40

SIMULATED 1972 COLD     5.41    51.34   457.5   2.21     16.04
SIMULATED 1972 HOT      4.72    47.60   444.0   2.22     16.68

COLD TRANSIENT  GRAMS  27.95   236.59  1545.6   9.46     16.34
COLD STABILIZED GRAMS  17.66   148.44  1866.0   7.14     15.76
HOT  TRANSIENT  GRAMS  17.72   208.59  1444.2   9.53     17.78
HOT  STABILIZED GRAMS  16.24   149.03  1867.6   6.87     15.92
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                     ANALYSIS OF KEY-MODE EMISSIONS

            SPEED       HC      CO      CO2     NOX      MPG

HIGH CRUISE 45  CONC    2917    0.89   14.14    2285
                MASS    1.81   13.78  301.28    4.44     27.10

LOW  CRUISE 30  CONC    1344    0.43   13.85     228
                MASS    0.95    4.93  342.11    0.50     25.24

IDLE         0  CONC    6324    3.75   12.27      51
                MASS    0.97   10.43   61.21    0.03     0.00

COMPOSITE   25  CONC    3370    1.31             512
                MASS    1.19   10.66            1.11

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: F0037
                                            CAR NUMBER:  0005

                                            AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 CHEV  CAMAR  8  307  2   7898 3500 11.2  N   Y  AI   Y   S-3

GRAMS PER MILE            HC        CO      CO2      NOX       MPG

1975 COMPOSITE           4.61     49.50   471.2     1.56      15.80

SIMULATED 1972 COLD      5.09     54.30   480.4     1.57      15.31

SIMULATED 1972 HOT       4.25     45.88   464.3     1.55      16.20

COLD TRANSIENT  GRAMS   22.76    262.97  1556.1     6.85      15.92

COLD STABILIZED GRAMS   15.39    144.29  2047.0     4.92      14.76

HOT  TRANSIENT  GRAMS   16.49    195.81  1434.9     6.69      18.05

HOT  STABILIZED GRAMS   14.61    150.28  1533.9     4.81      15.47
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                   ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     2715      1.17    14.53    1492

                MASS     3.08     22.79   312.16    3.97      24.90

LOW  CRUISE 23  CONC      976      0.53    14.14     200

                MASS     1.06     13.07   287.72    0.74      28.58

IDLE         0  CONC     4899      3.70    12.19      55

                MASS     0.68     10.47    62.00    0.04       0.00

COMPOSITE   20  CONC     2928      1.50              358

                MASS     1.36     13.84             1.06

               AUTOMOTIVE TESTING LABORATORIES, INC.
               19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: F0030
                                              CAR NUMBER:  0006

                                              BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 PONT  GTO    8  389  4  68841 4000 12.0  Y   Y  AI   N   S-4

GRAMS PER MILE                HC        CO      CO2      NOX        MPG

1975 COMPOSITE               12.13     88.38   581.3     2.34      11.74

SIMULATED 1972 COLD          18.21    116.48   588.2     2.22      10.74

SIMULATED 1972 HOT            7.55     67.18   576.2     2.44      12.62

COLD TRANSIENT  GRAMS 102.29   533.32  1567.5     5.14      10.35

COLD STABILIZED GRAMS  34.27   340.25  2443.6     7.48      11.11

HOT  TRANSIENT  GRAMS  22.35   163.53  1877.6    10.80      14.74

HOT  STABILIZED GRAMS  32.25   318.70  2418.5     7.49      11.35
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                      ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC     3300      1.07    12.79     2788

                MASS     1.87      3.36   456.58     6.62      17.52

LOW  CRUISE 30  CONC     1428      0.30    13.36      817

                MASS     1.79      7.80   406.88     3.34      20.96

IDLE         0  CONC     7645      5.56     7.01       34

                MASS     1.53     26.51    56.55     0.03       0.00

COMPOSITE   26  CONC     3892      1.75               761

                MASS     1.64     18.64              2.09

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 00038
                                              CAR NUMBER:  0006

                                              AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 PONT  GTO    8  389  4  68860 4000 12.0  Y   Y  AI   N   S-4

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           7.65    43.21    504.9     2.22     14.92

SIMULATED 1972 COLD     12.34    73.02    516.1     2.15     13.29

SIMULATED 1972 HOT       4.12    20.72    496.4     2.27     16.43

COLD TRANSIENT  GRAMS   75.99   461.78   1736.4    10.09     12.03

COLD STABILIZED GRAMS   16.59    85.83   2134.4     6.06     14.77

HOT  TRANSIENT  GRAMS   14.29    69.56   1588.7    10.96     18.65

HOT  STABILIZED GRAMS   15.54    72.57   1546.3     6.12     16.29
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                       ANALYSIS OF KEY-MODE EMISSIONS

                 SPEED          HC       CO      CO2      NOX       MPG

HIGH CRUISE 49   CONC         1567     0.17    13.00     2556

                 MASS         1.92     4.47   483.76     9.56     17.92

LOW  CRUISE 30   CONC         1857     0.25    12.72      443

                 MASS         1.96     5.26   407.60     3.28     21.10

IDLE         0   CONC         1428     0.15     9.74       34

                 MASS         0.41     1.35    65.53     0.05      0.00

COMPOSITE   26   CONC         1577     0.17               615

                 MASS         0.95     2.57              2.76

                  AUTOMOTIVE TESTING LABORATORIES, INC.
                  19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: E0035
                                          CAR NUMBER:  0007

                                          BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1971 PLYM  BARRA  8  318  2  18595 3500 11.2  Y   Y  EM   Y    A

GRAMS PER MILE               HC        CO       CO2      NOX        MPG

1975 COMPOSITE               4.21     79.68    512.0     2.41      13.65

SIMULATED 1972 COLD          4.60     88.56    523.6     2.25      13.15

SIMULATED 1972 HOT           3.91     72.56    503.2     2.46      14.13

COLD TRANSIENT  GRAMS      18.92    328.61   1852.4     5.42      13.35

COLD STABILIZED GRAMS      15.58    335.56   2075.0     8.17      12.93

HOT  TRANSIENT  GRAMS      13.76    211.81   1658.7    10.25      15.67

HOT  STABILIZED GRAMS      14.58    303.43   2036.5     8.17      13.40
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                         ANALYSIS OF KEY-MODE EMISSIONS

          SPEED              HC        CO       CO2      NOX        MPG

HIGH CRUISE 45  CONC       2019      0.82     13.85     1376

                MASS       2.20     21.24    516.03     5.17      16.01

LOW  CRUISE 30  CONC       3324      1.02     13.73     1183

                MASS       2.68     22.54    372.51     3.27      21.35

IDLE         0  CONC       4864      6.30     10.46       63

                MASS       0.78     25.10     68.13     0.05       0.00

COMPOSITE   25  CONC       2675      1.80                611

                MASS       1.33     23.85               1.76

                   AUTOMOTIVE TESTING LABORATORIES, INC.
                   19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 80046
                                              CAR NUMBER:  0007

                                              AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 PLYM  BARRA  8  318  2  18607 3500 11.2  Y   Y  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX        MPG

1975 COMPOSITE           3.23     40.62   527.6     2.64      14.80

SIMULATED 1972 COLD      3.50     48.22   540.2     2.55      14.20

SIMULATED 1972 HOT       3.02     34.89   518.1     2.71      15.29

COLD TRANSIENT  GRAMS  14.11    212.69  1879.1     9.71      14.40

COLD STABILIZED GRAMS  12.17    148.97  2172.4     9.44      14.02

HOT  TRANSIENT  GRAMS  10.90    112.73  1713.6    10.85      16.90

HOT  STABILIZED GRAMS  10.79    107.69  2175.2     9.05      14.42

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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC     2176     1.04    14.74     1415

                MASS     2.37    26.46   523.17     5.23      15.56

LOW  CRUISE 33  CONC     3028     0.80    15.05     1338

                MASS     2.27    14.88   339.97     2.99      24.04

IDLE         0  CONC     2332     0.94    15.02       78

                MASS     0.41     5.02    73.70     0.05       0.00

COMPOSITE   26  CONC     2295     0.94               668

                MASS     1.10    11.49              1.73

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: 0036
                                            CAR NUMBER:  0008

                                            BEFORE

                   DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 FORD  TBIRD  8  429  4  27986 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX        MPG

1975 COMPOSITE            9.21   167.50   600.5     2.51       9.57

SIMULATED 1972 COLD      10.45   175.52   635.5     2.63       9.39

SIMULATED 1972 HOT        8.24   161.46   571.8     2.43      10.46

COLD TRANSIENT  GRAMS    42.84   558.28  2282.4    11.70       9.86

COLD STABILIZED GRAMS    35.84   758.10  2514.2     7.59       8.58

HOT  TRANSIENT  GRAMS    29.58   452.83  1774.5    10.20      12.66

HOT  STABILIZED GRAMS    33.60   712.82  2265.4     7.68       9.82

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                    ANALYSIS OF KEY-MODE EMISSIONS

               SPEED       HC       CO      CO2      NOX        MPG

HIGH CRUISE 50  CONC      3579     3.10    12.67     1540

                MASS      3.75    72.55   465.25     5.57      15.07

LOW  CRUISE 35  CONC      3612     3.06    12.86      605

                MASS      2.99    63.83   373.88     1.64      18.41

IDLE         0  CONC     13903     8.37     7.85       54

                MASS      3.20    56.43    78.41     0.05       0.00

COMPOSITE   28  CONC      5461     3.90               478

                MASS      3.33    61.29              1.58

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: E0045
                                          CAR NUMBER:  0008

                                          AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODENR INRT RDHP A/C EVP EXH PCV TRANS
1968 FORD  TBIRD  8  429  4  28008 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE           HC       CO      CO2      NOX       MPG

1975 COMPOSITE          7.41   150.06   593.9     1.58      10.44

SIMULATED 1972 COLD     9.17   163.60   605.8     1.49       9.98

SIMULATED 1972 HOT      6.09   139.87   584.9     1.65      10.81

COLD TRANSIENT  GRAMS  41.58   593.98  2056.9     6.16      10.41

COLD STABILIZED GRAMS  27.19   633.09  2466.6     5.04       9.61

HOT  TRANSIENT  GRAMS  18.47   416.01  1900.3     7.32      12.44

HOT  STABILIZED GRAMS  23.51   576.13  2419.3     5.03      10.09

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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED         HC        CO      CO2      NOX        MPG

HIGH CRUISE 50  CONC    2958      2.82    13.56    1029

                MASS    3.68     70.29   541.21    4.40      13.43

LOW  CRUISE 35  CONC    3167      3.57    13.14     272

                MASS    2.86     71.93   403.65    0.81      16.94

IDLE         0  CONC    6533      7.86     9.49      60

                MASS    1.40     38.42    74.83    0.06       0.00

COMPOSITE   28  CONC    3631      3.68              294

                MASS    2.14     50.10             1.18

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                    TEST NUMBER: EC043
                                    CAR NUMBER:  0009

                                    BEFORE

                 DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1971 CHEV  C-10   8  350  4  12787 4000 12.0  N   N  AI   Y   S-4

GRAMS PER MILE           HC       CO      CO2      NOX       MPG

1975 COMPOSITE          6.35    73.42    526.5    2.66      13.45

SIMULATED 1972 COLD     7.29    85.87    543.2    2.62      12.59
SIMULATED 1972 HOT      5.64    61.02    513.8    2.69      14.19

COLD TRANSIENT  GRAMS  31.30   417.37   1500.3   12.12      12.24
COLD STABILIZED GRAMS  23.37   256.62   2174.0    7.54      12.93
HOT  TRANSIENT  GRAMS  18.94   201.00   1675.7   12.67      15.82
HOT  STABILIZED GRAMS  22.40   245.26   2131.8    8.14      13.25
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                  ANALYSIS OF KEY-MODE EMISSIONS
               SPEED        HC        CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC      1167      0.25    13.76     1452
                MASS      1.34      7.91   550.35     6.04      15.71

LOW  CRUISE 33  CONC      2437      0.90    14.14      573
                MASS      2.09     22.24   420.43     1.62      19.28

IDLE         0  CONC      8688      2.74     9.97       42
                MASS      1.09      7.26    41.26     0.05       0.00

COMPOSITE   27  CONC      2670      0.76               455
                MASS      1.25      9.07              1.68

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: E0050
                                            CAR NUMBER:  0009

                                            AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

  YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ACHP A/C EVP EXH PCV TRANS
  1971 CHEV  C-10   8  350  4  12805 4000 12.0  N   N  AI   Y   S-4

  GRAMS PER MILE            HC        CO      CO2       NOX        MPG

  1975 COMPOSITE           5.65     79.10    553.6     2.04       12.80

  SIMULATED 1972 COLD      6.73     55.49    568.6     2.05       12.03

  SIMULATED 1972 HOT       4.83     66.73    542.3     2.03       13.44

  COLD TRANSIENT  GRAMS  30.96    445.50  1890.1      8.86       12.09

  COLD STABILIZED GRAMS  19.53    270.68  2374.7      6.52       11.98

  HOT  TRANSIENT  GRAMS  16.69    229.80  1652.2      8.74       15.43

  HOT  STABILIZED GRAMS  19.52    291.46  2134.9      5.65       12.92
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                     ANALYSIS OF KEY-MODE EMISSIONS

            SPEED           HC         CO      CO2       NOX         MPG

  HIGH CRUISE 49  CONC     1984       0.73    14.14     1743

                  MASS     2.30      19.42   531.49     6.55        15.64

  LOW  CRUISE 33  CONC     3098       0.98    12.72      797

                  MASS     2.75      24.42   396.32     2.17        20.08

  IDLE         0  CONC     8689       4.39    10.55       60

                  MASS     0.81      17.62    68.07     0.06         0.00

  COMPOSITE   27  CONC     3322       1.39               572

                  MASS     1.39      18.82              1.90

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC044
                                        CAR NUMBER:  0010

                                        BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1969 CHEV  NOVA   8  350  2  32731 3000 10.3  N   N  AI   Y    A

 GRAMS PER MILE             HC       CO       CO2      NOX        MPG

 1975 COMPOSITE             5.83    106.44    473.8     3.53      13.50

 SIMULATED 1972 COLD        7.65    125.06    485.8     3.26      12.60

 SIMULATED 1972 HOT         4.46     92.39    464.7     3.73      14.27

 COLD TRANSIENT  GRAMS  37.31     523.84  1608.5    11.06      12.75

 COLD STABILIZED GRAMS  20.07     414.10  2035.0    13.36      12.47

 HOT  TRANSIENT  GRAMS  13.39     278.85  1450.2    14.64      16.84

 HOT  STABILIZED GRAMS  18.08     374.53  1800.6    13.69      14.02
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                       ANALYSIS OF KEY-MODE EMISSIONS
             SPEED          HC       CO      CO2      NOX         MPG

 HIGH CRUISE 45  CONC      3404      2.58    14.06    2247

                 MASS      3.14     57.72  447.17     7.01      16.26

 LOW  CRUISE 30  CONC      4099      3.20    13.56    1453

                 MASS      3.06     56.43  336.54     3.34      20.48

 IDLE         0  CONC      5907      5.93    11.54      96

                 MASS      1.02     23.08   64.59     0.06       0.00

 COMPOSITE   25  CONC      3933      3.13             863

                 MASS      1.77     35.44             2.20

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                           TEST NUMBER: E0049
                                           CAR NUMBER:  0010

                                           AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HCHP A/C EVP EXH PCV TRANS
1969 CHEV  NOVA   8  350  2  32739 3000 10.3  N   N  AI   Y    A

GRAMS PER MILE           HC       CO     CO2      NOX       MPG

1975 COMPOSITE          4.59    76.04   474.4    3.30     14.64

SIMULATED 1972 COLD     6.55    95.93   482.4    3.09     13.49

SIMULATED 1972 HOT      3.11    58.02   466.4    3.45     15.64

COLD TRANSIENT  GRAMS  35.90   482.65  1627.8   11.11     13.00

COLD STABILIZED GRAMS  13.22   266.16  1990.2   12.06     13.99

HOT  TRANSIENT  GRAMS  10.14   168.37  1522.9   13.83     17.87

HOT  STABILIZED GRAMS  12.18   220.21  1874.2   11.69     15.18
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                    ANALYSIS OF KEY-MODE EMISSIONS

               SPEED        HC       CO      CO2      NOX       MPG

HIGH CRUISE 45   CONC      3073     2.05    13.17    2146

                 MASS      2.86    47.79   408.44    6.49     18.08

LOW  CRUISE 30   CONC      3132     2.02    12.67    1261

                 MASS      2.44    33.18   329.68    3.22     22.86

IDLE         0   CONC      2889     2.83    11.95     157

                 MASS      0.71    12.43    85.63    0.13      0.00

COMPOSITE   25   CONC      3046     2.09              818

                 MASS      1.44    23.59             2.10

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0047
                                                CAR NUMBER:  0011

                                                BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1971 FORD  PINTO  4  122  2   7103 2250  8.8  N   Y  AI   Y   S-4

 GRAMS PER MILE           HC        CO       CO2      NOX       MPG

 1975 COMPOSITE           8.95    100.68    240.2     1.28     20.87

 SIMULATED 1972 COLD     10.13    110.14    240.2     1.19     19.99

 SIMULATED 1972 HOT       8.06     93.53    240.1     1.36     21.58

 COLD TRANSIENT  GRAMS   39.62    412.55    826.8     4.56     20.31

 COLD STABILIZED GRAMS   36.37    413.52    974.9     4.34     19.71

 HOT  TRANSIENT  GRAMS   24.06    287.97    825.8     5.85     24.00

 HOT  STABILIZED GRAMS   34.28    401.23    929.4     3.80     20.55
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                       ANALYSIS OF KEY-MODE EMISSIONS

               SPEED      HC        CO       CO2      NOX       MPG

 HIGH CRUISE 37  CONC     4864      3.06     12.86     1666

                 MASS     2.68    104.33    264.33     3.54     20.39

 LOW  CRUISE 23  CONC     7124      7.42      9.74      176

                 MASS     3.03     83.52    163.83     0.30     29.23

 IDLE         0  CONC    17206      8.47      6.33        9

                 MASS     1.02     15.60     21.62     0.02      0.00

 COMPOSITE   20  CONC     7350      4.37               364

                 MASS     1.65     45.34               0.87

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                   19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0055
                                                CAR NUMBER:  0011

                                                AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

    YEAR MAKE  MODEL CYL CID BBL CODENR INRT RCHP A/C EVP EXH PCV TRANS
    1971 FORD  PINTO  4  122  2   7122 2250  8.8  N    Y  AI   Y   S-4

    GRAMS PER MILE           HC       CO      CO2      NOX        MPG

    1975 COMPOSITE          3.85    59.35   271.8     1.41       23.61

    SIMULATED 1972 COLD     4.29    65.85   274.6     1.38       22.74
    SIMULATED 1972 HOT      3.52    54.41   269.7     1.44       24.31

    COLD TRANSIENT  GRAMS  18.36   265.73   920.3     5.58       23.25
    COLD STABILIZED GRAMS  13.81   228.45  1135.0     4.76       22.24
    HOT  TRANSIENT  GRAMS  12.62   179.63   683.8     6.05       26.96
    HOT  STABILIZED GRAMS  12.62   218.96  1076.6     4.73       23.47
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                        ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC        CO      CO2      NOX        MPG

   HIGH CRUISE 37  CONC     4238      1.09    14.00     2401
                   MASS     2.41     18.68   163.98     4.48      44.31

   LOW  CRUISE 23  CONC     5038      4.72    11.75      238
                   MASS     2.34     55.11   210.86     0.40      29.21

   IDLE         0  CONC     4728      3.06    13.08       79
                   MASS     0.53      8.85    51.94     0.05       0.00

   COMPOSITE   20  CONC     4412      1.75               545
                   MASS     1.20     16.41              1.12

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0048
                                                CAR NUMBER:  0012

                                                BEFORE


                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 FORD  GALAX  8  400  2  10393 4000 12.0  Y   Y  AI   Y    A

GRAMS PER MILE             HC       CO      CO2     NOX       MPG

1975 COMPOSITE            4.66   105.20   583.9    4.41     11.66

SIMULATED 1972 COLD       4.76   112.82   603.9    4.37     11.19

SIMULATED 1972 HOT        4.58    99.45   565.1    4.45     12.04

COLD TRANSIENT  GRAMS    17.84   384.10  2135.7   17.88     11.63

COLD STABILIZED GRAMS    17.89   462.06  2390.8   14.66     10.80

HOT  TRANSIENT  GRAMS    16.44   283.78  1877.6   18.53     13.68

HOT  STABILIZED GRAMS    16.50   444.68  2265.4   12.39     11.35

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                    ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC       CO      CO2     NOX       MPG

HIGH CRUISE 49  CONC     2506     1.81    14.11    2518

                MASS     2.71    49.10   521.89    5.22     14.66

LOW  CRUISE 33  CONC     2430     0.95    14.47    1174

                MASS     1.33    24.03   414.88    3.29     15.49

IDLE         0  CONC     4516     6.41    10.79      85

                MASS     1.07    38.63    98.64    0.11      0.00

COMPOSITE   27  CONC     2864     2.46              832

                MASS     1.53    39.65             2.72

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC054
                                              CAR NUMBER:  0012

                                              AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
 1972 FORD  GALAX  8  400  2  10413 4000 12.0  Y   Y  AI   Y    A

 GRAMS PER MILE             HC        CO      CO2      NOX       MPG

 1975 COMPOSITE            3.28     54.23    623.5    3.25      12.38

 SIMULATED 1972 COLD       3.63     64.72    644.8    3.20      11.75

 SIMULATED 1972 HOT        3.02     46.31    607.4    3.28      12.91

 COLD TRANSIENT  GRAMS  15.33    296.16   2212.7   12.77      11.92

 COLD STABILIZED GRAMS  11.86    189.22   2623.6   11.20      11.59

 HOT  TRANSIENT  GRAMS  10.76    158.13   1931.8   13.43      14.68

 HOT  STABILIZED GRAMS  11.63    179.90   2905.0   10.61      12.12
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                      ANALYSIS OF KEY-MODE EMISSIONS
             SPEED          HC        CO      CO2      NOX       MPG

 HIGH CRUISE 49  CONC     2193      0.98    14.23    2247

                 MASS     2.46     23.59   519.50    6.72      15.37

 LOW  CRUISE 33  CONC     1804      0.51    14.47     894

                 MASS     1.71      9.48   418.44    2.45      20.30

 IDLE         0  CONC     2941      2.74    13.33     106

                 MASS     0.70     14.33   113.35    0.10      0.00

 COMPOSITE   27  CONC     2215      1.20              713

                 MASS     1.27     18.63             2.01

                 AUTOMOTIVE TESTING LABORATORIES, INC.
                 19900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: 80052
                                             CAR NUMBER:  0013

                                             BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 PLYM  SATEL  8  318  2   8513 3500 11.2  N   Y  EM   Y    A

GRAMS PER MILE           HC       CO      CO2      NOX        MPG

1975 COMPOSITE          3.26     67.70   529.1     3.28      13.79

SIMULATED 1972 COLD     3.65     80.62   542.9     3.04      13.08

SIMULATED 1972 HOT      2.96     57.96   518.8     3.46      14.38

COLD TRANSIENT  GRAMS  16.00    354.50  1774.8    13.21      13.64

COLD STABILIZED GRAMS  11.39    250.12  2296.8     9.56      12.58

HOT  TRANSIENT  GRAMS  10.84    184.57  1554.0    16.36      16.95

HOT  STABILIZED GRAMS  12.78    270.65  2046.5    11.59      13.65

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                       ANALYSIS OF KEY-MODE EMISSIONS

              SPEED      HC       CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC    2361      0.55    13.51    2378

                MASS    2.39     22.94   464.45    7.91      17.53

LOW  CRUISE 30  CONC    2778      1.36    14.03    1261

                MASS    2.19    159.30   146.00    3.02      22.09

IDLE         0  CONC    4064      5.26    11.16      83

                MASS    0.77     24.65    86.54    0.06       0.00

COMPOSITE   25  CONC    2719      1.73             829

                MASS    1.33     39.03             2.35

                   AUTOMOTIVE TESTING LABORATORIES, INC.
                   19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: E0061
                                                  CAR NUMBER:  0013

                                                  AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMPR INRT RCHP A/C EVP EXH PCV TRANS
1972 PLYM  SATAL  8  318  2   8539 3500 11.2  N   Y  EM   Y    A

GRAMS PER MILE            HC        CO       CO2       NOX        MPG

1975 COMPOSITE           2.86     60.14    545.0      2.03       13.73

SIMULATED 1972 COLD      3.16     67.93    563.3      2.02       13.10

SIMULATED 1972 HOT       2.64     54.26    531.2      2.05       14.25

COLD TRANSIENT  GRAMS   13.07    286.43   1936.1      8.24       13.39

COLD STABILIZED GRAMS   10.61    223.01   2288.6      6.88       12.83

HOT  TRANSIENT  GRAMS    9.21    183.97   1655.7      8.46       16.14

HOT  STABILIZED GRAMS   10.42    241.60   2173.0      6.29       13.26

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                        ANALYSIS OF KEY-MODE EMISSIONS

             SPEED        HC        CO       CO2       NOX        MPG

HIGH CRUISE 45  CONC     2037      1.16     13.76     1106

                MASS     2.23     41.76    485.65     3.55       15.55

LOW  CRUISE 30  CONC     2402      0.58     14.00      676

                MASS     1.91     21.14    365.50     1.68       22.00

IDLE         0  CONC     2889      4.29     11.66       77

                MASS     0.60     19.62     85.86     0.06        0.00

COMPOSITE   25  CONC     2230      1.65                427

                MASS     1.16     25.35               1.22

                AUTOMOTIVE TESTING LABORATORIES, INC.
                15900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: EC053
                                            CAR NUMBER:  0014

                                            BEFORE

                          DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 PONT  CATAL  8  400  2  75644 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX        MPG

1975 COMPOSITE           5.21    80.58    547.6     3.77      12.89

SIMULATED 1972 COLD      6.29   100.63    561.4     3.52      12.04

SIMULATED 1972 HOT       4.39    65.46    537.3     3.96      13.62

COLD TRANSIENT  GRAMS   28.93   496.40   1955.1    12.01      11.48

COLD STABILIZED GRAMS   18.26   258.30   2251.2    14.36      12.63

HOT  TRANSIENT  GRAMS   14.64   232.67   1778.2    15.36      14.84

HOT  STABILIZED GRAMS   17.51   219.87   2227.2    14.41      13.05
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                     ANALYSIS OF KEY-MODE EMISSIONS
              SPEED         HC       CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC      2280      0.43    14.00     2711

                MASS      2.71     11.43   515.41     9.66      16.31

LOW  CRUISE 33  CONC      3508      1.29    13.75     1783

                MASS      3.29     24.33   3[illegible].27    4.88      20.43

IDLE         0  CONC      3578      2.70    12.45      105

                MASS      0.83     12.86    92.73     0.09       0.00

COMPOSITE   27  CONC      2646      0.92              1045

                MASS      1.55     13.76              3.08

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: E0060
                                              CAR NUMBER:  0014

                                              AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1969 PONT  CATAL  8  400  2  75671 4000 12.0  Y   N   EM  Y    A

GRAMS PER MILE              HC        CO      CO2      NOX        MPG

1975 COMPOSITE              5.22     66.83    575.8     3.65      12.70

SIMULATED 1972 COLD         6.64     92.55    551.3     3.23      11.75

SIMULATED 1972 HOT          4.19     47.43    571.2     3.97      13.52

COLD TRANSIENT  GRAMS      32.54    529.21   1565.3     5.72      11.20

COLD STABILIZED GRAMS      16.82    164.88   2465.1    14.52      12.33

HOT  TRANSIENT  GRAMS      14.33    190.82   1815.0    15.26      15.05

HOT  STABILIZED GRAMS      16.01    122.48   2470.9    14.84      12.64
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                     ANALYSIS OF KEY-MODE EMISSIONS

               SPEED        HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC      2430      0.47    14.23     2935

                MASS      2.91     11.68   537.62    10.69      15.76

LOW  CRUISE 33  CONC      3473      1.00    13.76     1821

                MASS      3.04     25.59   385.55     4.84      20.22

IDLE         0  CONC      2743      0.88    13.42      162

                MASS      0.63      5.82   106.89     0.12       0.00

COMPOSITE   27  CONC      2558      0.57              1122

                MASS      1.46      9.51              3.33

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                                        TEST NUMBER: E0058
                                        CAR NUMBER:  0015

                                        BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                     1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMTR INRT RDHP A/C EVP EXH PCV TRANS
1968 CHEV  IMPAL  8  327  4  46072 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE          HC       CO      CO2      NOX       MPG

1975 COMPOSITE         5.21    50.46    553.0    3.57     13.73

SIMULATED 1972 COLD    5.33    52.79    573.9    4.16     13.22

SIMULATED 1972 HOT     5.12    48.69    537.2    3.83     14.14

COLD TRANSIENT  GRAMS 21.26   240.68   2066.9   18.15     12.94

COLD STABILIZED GRAMS 18.73   155.25   2237.3   13.08     12.90

HOT  TRANSIENT  GRAMS 19.64   209.96   1751.6   15.62     14.89

HOT  STABILIZED GRAMS 19.77   210.84   2114.8   10.04     13.67
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                 ANALYSIS OF KEY-MODE EMISSIONS
          SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC   3195     0.72    13.65    2672

                MASS   4.06    20.91   548.73   10.87     14.98

LOW  CRUISE 33  CONC   4760     2.13    13.14    1261

                MASS   4.29    46.88   400.30    3.78     18.27

IDLE         0  CONC   3056     0.52    13.65     108

                MASS   0.55     1.36    76.46    0.08      0.00

COMPOSITE   27  CONC   3336     0.80              895

                MASS   1.83    11.28              3.16

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           19900 E. COLFAX, AURORA, COLO. 80011
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                                                   TEST NUMBER: E0067
                                                   CAR NUMBER:  0015

                                                   AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR IART RCHP A/C EVP EXH PCV TRANS
1968 CHEV  IMPAL  8  327  4  46091 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE             HC        CO      CO2      NOX        MPG

1975 COMPOSITE            5.84    101.32    535.1     2.51      12.42

SIMULATED 1972 COLD       6.22    106.84    556.5     2.57      11.56

SIMULATED 1972 HOT        5.56     97.15    525.6     2.45      12.80

COLD TRANSIENT  GRAMS   24.77    405.75   1972.1    11.66      12.09

COLD STABILIZED GRAMS   21.85    355.55   2204.9     7.65      11.84

HOT  TRANSIENT  GRAMS   19.86    333.09   1737.3    10.75      13.95

HOT  STABILIZED GRAMS   20.63    378.30   2099.7     6.47      12.42

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                       ANALYSIS OF KEY-MODE EMISSIONS

              SPEED         HC        CO      CO2      NOX         MPG

HIGH CRUISE 49  CONC      3473      1.43    13.62     2115

                MASS      3.88     33.26   465.45     7.16       16.68

LOW  CRUISE 33  CONC      5212      3.50    11.52      553

                MASS      4.59     70.15   355.77     1.66       18.53

IDLE         0  CONC      5559      6.09    10.24       77

                MASS      1.06     23.74    68.47     0.08        0.00

COMPOSITE   27  CONC      4037      2.47               553

                MASS      2.13     31.23              1.96

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                 TEST NUMBER: 8059
                                                 CAR NUMBER:  0016

                                                 BEFORE

                          DYNAMOMETER EMISSION RESULTS USING
                             1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH FCV TRANS
1970 CHEV  CAPRI  8  400  2  32553 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC        CO       CO2      NOX       MPG

1975 COMPOSITE              5.41     74.08    526.7     3.65     13.45

SIMULATED 1972 COLD         6.90     99.31    534.7     3.16     12.50

SIMULATED 1972 HOT          4.29     55.04    520.7     4.02     14.35

COLD TRANSIENT  GRAMS  34.03    813.96   1809.2    10.23     11.93

COLD STABILIZED GRAMS  17.70    230.88   2200.7    13.51     13.09

HOT  TRANSIENT  GRAMS  14.48    181.95   1704.4    16.66     15.97

HOT  STABILIZED GRAMS  16.15    167.71   2175.5    14.08     13.77
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                         ANALYSIS OF KEY-MODE EMISSIONS
              SPEED           HC        CO       CO2      NOX       MPG

HIGH CRUISE 49   CONC    3219      2.43     13.08     2053

                 MASS    3.60     62.35    485.45     7.39      14.87

LOW  CRUISE 33   CONC    3028      0.66     14.23     1781

                 MASS    2.76     10.87    401.86     4.84      20.82

IDLE         0   CONC    3306      1 23      2.25       74

                 MASS    0.58      4.43     65.17     0.05       0.00

COMPOSITE   27   CONC    3215      1.89                908

                 MASS    1.58     15.68               2.53

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                                    TEST NUMBER: E0066
                                                    CAR NUMBER:  0016

                                                    AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C FVP EXH PCV TRANS
 1970 CHEV  CAPRI  8  400  2  32575 4000 12.0  Y   N  EM   Y    A

 GRAMS PER MILE             HC        CO       CO2      NOX       MPG

 1975 COMPOSITE            4.22     62.24     558.8     3.33     13.29

 SIMULATED 1972 COLD       4.99     83.26     566.1     3.06     12.50

 SIMULATED 1972 HOT        3.64     46.38     553.2     3.53     13.97

 COLD TRANSIENT  GRAMS  22.92     451.23  1880.3    10.85      12.21

 COLD STABILIZED GRAMS  14.54     173.25  2365.2    12.09      12.78

 HOT  TRANSIENT  GRAMS  12.79     174.62  1784.1    14.41      15.49

 HOT  STABILIZED GRAMS  14.33     152.39  2357.5    12.86      12.97
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                      ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO       CO2      NOX       MPG

 HIGH CRUISE 49   CONC    3132      2.66     12.86     1859

                  MASS    3.35     66.28    481.08     5.87     14.95

 LOW  CRUISE 33   CONC    2611      0.37     14.08     1878

                  MASS    2.33      6.46    406.08     5.18     21.02

 IDLE          0  CONC    3028      1.81     13.51      119

                  MASS    0.65      8.76     56.11     0.13      0.00

 COMPOSITE    27  CONC    3058      2.12               918

                  MASS    1.53     22.95               2.29

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: E0064
                                          CAR NUMBER:  0017

                                          BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 OLDS  TORON  8  455  4  52867 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX        MPG

1975 COMPOSITE           5.16    87.11    668.5     2.31      10.84

SIMULATED 1972 COLD      6.39   113.86    680.1     2.10      10.13

SIMULATED 1972 HOT       4.24    66.93    659.7     2.47      11.44

COLD TRANSIENT  GRAMS   32.35   608.21   2353.4     7.14       9.53

COLD STABILIZED GRAMS   15.55   245.76   2747.5     8.58      10.77

HOT  TRANSIENT  GRAMS   16.27   256.18   2200.5     9.97      12.25

HOT  STABILIZED GRAMS   14.30   175.24   2703.2     8.49      11.33
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                          ANALYSIS OF KEY-MODE EMISSIONS
                SPEED         HC        CO      CO2     NOX         MPG

HIGH CRUISE 49  CONC        2083      1.17    14.59    1434

                MASS        2.95     34.98   667.44    6.68       12.17

LOW  CRUISE 33  CONC        2430      1.43    14.56     720

                MASS        2.61     36.92   266.18    2.66       26.79

IDLE         0  CONC        2106      0.09    13.11      54

                MASS        0.41      0.81    76.27    0.05        0.00

COMPOSITE   27  CONC        2124      0.94              450

                MASS        1.29     13.36             2.00

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0070
                                                CAR NUMBER:  0017

                                                AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 OLDS  TORON  8  455  4  52885 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE            HC        CO      CO2      NOX       MPG

1975 COMPOSITE           4.49     53.31    681.8     2.24     10.57

SIMULATED 1972 COLD      4.98    110.69    658.6     2.06     10.03

SIMULATED 1972 HOT       4.12     80.19    665.1     2.38     11.02

COLD TRANSIENT  GRAMS   20.83    507.76   2434.8     7.13      9.86

COLD STABILIZED GRAMS   16.55    322.44   2804.7     8.35     10.19

HOT  TRANSIENT  GRAMS   14.36    279.00   2213.3     9.50     12.05

HOT  STABILIZED GRAMS   13.95    182.12   2688.4     9.18     10.65
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                        ANALYSIS OF KEY-MODE EMISSIONS
            SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC     2222      1.43    14.44     1203

                MASS     2.98     42.27   647.30     5.56     12.32

LOW  CRUISE 33  CONC     2187      1.10    14.65      747

                MASS     2.56     30.21   265.23     2.83     27.76

IDLE         0  CONC     1706      0.10    14.08      109

                MASS     0.49      0.68   107.37     0.12      0.00

COMPOSITE   27  CONC     2124      1.08               479

                MASS     1.35     14.36              1.82

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: E0065
                                         CAR NUMBER:  0018

                                         BEFORE

                       DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ENGMR INRT RCMP A/C EVP EXH PCV TRANS
 1969 FORD  MLSTA  8  428  4  31426 3500 11.2  N   N  AI   Y    A

 GRAMS PER MILE            HC       CO      CO2      NOX       MPG

 1975 COMPOSITE           6.54    91.92    573.2    1.99      12.06

 SIMULATED 1972 COLD      7.74    96.63    575.6    1.98      11.84

 SIMULATED 1972 HOT       5.64    88.37    571.4    2.00      12.23

 COLD TRANSIENT  GRAMS  32.59    349.91   2010.3    8.55      12.21

 COLD STABILIZED GRAMS  25.43    374.86   2306.4    6.29      11.52

 HOT  TRANSIENT  GRAMS  16.87    287.89   1979.1    8.71      13.08

 HOT  STABILIZED GRAMS  21.08    353.99   2279.5    6.10      11.82
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                         ANALYSIS OF KEY-MODE EMISSIONS
                SPEED         HC       CO      CO2      NOX       MPG

 HIGH CRUISE 45  CONC     1532      2.46    11.56     952

                 MASS     2.22     77.62   581.91    4.89      12.53

 LOW  CRUISE 30  CONC     1463      1.60    10.77     460

                 MASS     1.92     46.09   457.99    1.78      16.60

 IDLE         0  CONC     8862      4.59     9.52      53

                 MASS     1.96     21.54    85.51    0.05       0.00

 COMPOSITE   25  CONC     2859      2.63              328

                 MASS     2.02     38.31             1.44

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                    19900 E. COLFAX, AURORA, COLO. 80011
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                                                   TEST NUMBER: E0071
                                                   CAR NUMBER:  0018

                                                   AFTER

                             DYNAMOMETER EMISSION RESULTS USING
                                1975 FEDERAL TEST PROCEDURES

  YEAR MAKE  MODEL CYL CID BBL ODOMR IART REHP A/C EVP EXH PCV TRANS
  1969 FORD  MUSTA  8  428  4  31440 3500 11.2  N   N  AI   Y    A

  GRAMS PER MILE               HC      CO      CO2      NOX       MPG

  1975 COMPOSITE              5.61    99.40   628.0     3.35     11.11

  SIMULATED 1972 COLD         6.67   117.86   646.4     3.12     10.44

  SIMULATED 1972 HOT          4.80    85.48   614.1     3.53     11.66

  COLD TRANSIENT  GRAMS      27.73   496.48  2255.5    11.66     10.28

  COLD STABILIZED GRAMS      22.29   387.48  2552.3    11.75     10.61

  HOT  TRANSIENT  GRAMS      13.71   253.60  2093.6    14.72     13.03

  HOT  STABILIZED GRAMS      19.23   320.90  2585.3    13.21     10.87
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                          ANALYSIS OF KEY-MODE EMISSIONS
                SPEED          HC      CO      CO2      NOX       MPG

  HIGH CRUISE 45  CONC       1376     2.19    11.79    1328

                  MASS       1.59    70.80   561.56    5.35      13.11

  LOW  CRUISE 30  CONC       1254     1.04    11.32     740

                  MASS       1.55    37.84   457.48    2.89      17.07

  IDLE         0  CONC       3821     3.23    10.43     101

                  MASS       1.34    26.41   131.75    0.23       0.00

  COMPOSITE   25  CONC       1808     2.19              532

                  MASS       1.53    38.81             1.86

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: E0068
                                              CAR NUMBER:  0019

                                              BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 AMC   440    6  232  1  69119 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX       MPG

1975 COMPOSITE             3.58    53.30    425.2    4.01     17.07

SIMULATED 1972 COLD        4.39    56.36    434.5    4.13     16.59

SIMULATED 1972 HOT         3.67    50.58    418.3    3.93     17.46

COLD TRANSIENT  GRAMS  18.87   249.24   1555.6   15.96     16.16

COLD STABILIZED GRAMS  14.09   173.47   1658.8   15.00     17.01

HOT  TRANSIENT  GRAMS  13.44   208.92   1438.4   14.47     17.97

HOT  STABILIZED GRAMS  13.89   165.16   1627.5   14.60     17.65

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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC     2778      1.77    13.56     2479

                MASS     2.93     40.79   426.33     7.81      17.83

LOW  CRUISE 30  CONC     3647      1.35    13.56     1621

                MASS     2.42     25.84   314.13     4.06      24.57

IDLE         0  CONC     4134      3.18    12.92      121

                MASS     0.39      6.63    51.74     0.06       0.00

COMPOSITE   25  CONC     3117      1.89              1019

                MASS     1.23     17.32              2.50

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                                    TEST NUMBER: EC075
                                                    CAR NUMBER:  0019

                                                    AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 AMC   440     6 232   1 61133 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE            HC        CO      CO2      NOX       MPG

1975 COMPOSITE            4.25      51.51   438.7    4.54      16.71

SIMULATED 1972 COLD       4.88      65.16   444.6    4.11      15.66

SIMULATED 1972 HOT        3.78      38.20   434.2    4.86      17.55

COLD TRANSIENT  GRAMS  21.15     351.55  1487.5   11.85      14.98

COLD STABILIZED GRAMS  15.46     127.11  1846.8   19.00      16.36

HOT  TRANSIENT  GRAMS  12.85     159.39  1410.1   17.48      19.11

HOT  STABILIZED GRAMS  14.47     101.92  1753.1   20.50      17.15
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                     ANALYSIS OF KEY-MODE EMISSIONS
               SPEED        HC         CO      CO2      NOX       MPG


HIGH CRUISE 45  CONC     3219       2.27    13.56    2285

                MASS     2.55      51.74   419.32    7.64      17.60

LOW  CRUISE 30  CONC     3851       1.46    13.65    2247

                MASS     2.75      26.44   318.37    4.84      24.16

IDLE         0  CONC     5733       0.55    13.28     279

                MASS     1.16       1.52    66.30    0.19       0.00

COMPOSITE   25  CONC     3749       1.78             1170

                MASS     1.79      17.12             2.67

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                                   TEST NUMBER: E0069
                                                   CAR NUMBER:  0020

                                                   BEFORE


                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1972 CHRY  NEWPO  8  400  2  10730 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX        MPG

1975 COMPOSITE            6.30    119.75   588.0     2.37      11.19

SIMULATED 1972 COLD       8.17    131.52   557.6     2.39      10.73

SIMULATED 1972 HOT        4.89    110.87   580.8     2.35      11.56

COLD TRANSIENT  GRAMS    41.48    525.57  2026.4    10.73      10.90

COLD STABILIZED GRAMS    19.83    460.83  2456.0     7.17      10.57

HOT  TRANSIENT  GRAMS    16.86    270.70  1855.6    10.48      12.82

HOT  STABILIZED GRAMS    19.58    481.63  2355.5     6.52      10.65

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                         ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC       CO      CO2      NOX        MPG


HIGH CRUISE 49   CONC     3647     2.90    12.8[illegible]   1520

                 MASS     4.38    75.00   524.21     6.02      13.58

LOW  CRUISE 33   CONC     3230     0.52    14.14     1372

                 MASS     3.53    47.99   434.16     4.15      17.10

IDLE         0   CONC     3821     4.79    11.54       81

                 MASS     0.86    24.76    58.66     0.09       0.00

COMPOSITE   27   CONC     3635     2.88               658

                 MASS     2.04    39.92               2.13

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                      19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0074
                                        CAR NUMBER:  0020

                                        AFTER

                  DYNAMOMETER EMISSION RESULTS USING
                     1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 CHRY  NEWPC  8  400  2  10748 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE             HC       CO       CO2      NOX       MPG

1975 COMPOSITE            5.46    127.42    593.8     1.88     10.58

SIMULATED 1972 COLD       6.14    133.83    617.4     1.89     10.51

SIMULATED 1972 HOT        4.95    122.58    576.0     1.87     11.36

COLD TRANSIENT  GRAMS    26.30    496.66   2140.1     8.56     10.82

COLD STABILIZED GRAMS    19.74    507.04   2490.4     5.61     10.24

HOT  TRANSIENT  GRAMS    17.40    412.33   1825.5     8.40     12.84

HOT  STABILIZED GRAMS    19.37    544.13   2285.1     4.91     10.71
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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC        CO       CO2      NOX       MPG

HIGH CRUISE 46  CONC     3999      4.11      8.05      855

                MASS     4.80     55.47    540.28     3.66     12.62

LOW  CRUISE 33  CONC     3752      2.58     13.71      757

                MASS     3.52     61.27    445.19     2.57     16.11

IDLE         0  CONC     4169      6.14     11.04       65

                MASS     0.94     33.87     58.08     0.07      0.00

COMPOSITE   27  CONC     4001      4.11                410

                MASS     2.21     52.35               1.31

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: 00072
                                                  CAR NUMBER:  0021

                                                  BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL DOCMR INRT RCHP A/C EVP EXH PCV TRANS
1970 LINC  CONTI  8  460  4  20038 5000 13.4  Y   N  AI   Y    A

GRAMS PER MILE            HC        CO       CO2       NOX        MPG

1975 COMPOSITE           3.82     89.78     742.7      2.29       9.94

SIMULATED 1972 COLD      4.87    101.33     759.5      2.30       9.53

SIMULATED 1972 HOT       3.03     81.07     725.9      2.29      10.27

COLD TRANSIENT  GRAMS   25.13    493.95    2634.0      7.74       9.32

COLD STABILIZED GRAMS   11.41    266.01    3062.5      9.50       9.75

HOT  TRANSIENT  GRAMS   11.34    341.99    2412.0      7.66      10.85

HOT  STABILIZED GRAMS   14.30    216.78    3045.2      9.90       9.99

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                      ANALYSIS OF KEY-MODE EMISSIONS

               SPEED      HC        CO       CO2       NOX        MPG

HIGH CRUISE 49  CONC     1049      1.33     14.32      703

                MASS     1.56     44.51    724.16      3.59      11.15

LOW  CRUISE 33  CONC      523      0.39     13.91      442

                MASS     0.74     11.04    643.03      2.13      13.44

IDLE         0  CONC     2889      2.62     12.59      103

                MASS     0.81     14.10    108.77      0.10       0.00

COMPOSITE   27  CONC     1325      1.39                299

                MASS     1.01     21.40                1.24

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                 15900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0079
                                        CAR NUMBER:  0021

                                        AFTER


                     DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODNR INRT ACHP A/C EVP EXH PCV TRANS
1970 LINC  CONTI  8  460  4  20050 5000 13.4  Y   N   AI  Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           4.98     70.27   632.6     4.20     11.74

SIMULATED 1972 COLD      5.83     88.45   648.0     4.04     11.06

SIMULATED 1972 HOT       4.33     56.50   621.1     4.32     12.31

COLD TRANSIENT  GRAMS   25.72    435.46  2225.7    14.05     10.87

COLD STABILIZED GRAMS   19.01    227.90  2634.4    16.27     11.24

HOT  TRANSIENT  GRAMS   14.48    196.30  2023.6    16.16     13.67

HOT  STABILIZED GRAMS   10.55    183.03  2556.5    16.06     11.75
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                     ANALYSIS OF KEY-MODE EMISSIONS

            SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC     3045      1.94    11.61    1558

                MASS     4.11     63.42   538.62    7.46     13.67

LOW  CRUISE 33  CONC     2541      0.72    11.06    1106

                MASS     3.10     19.64   446.40    4.61     18.21

IDLE         0  CONC     3995      2.66    11.41      88

                MASS     0.87     14.03    51.80    0.15      0.00

COMPOSITE   27  CONC     3165      1.87              643

                MASS     1.94     27.04             2.57

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              15900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: E0073
                                                  CAR NUMBER:  0022

                                                  BEFORE

                       DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 DATS  510    4   97  2  12449 2500  9.4  N   N   AI  Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           3.22     33.34   330.2     3.76      22.68

SIMULATED 1972 COLD      3.63     37.85   345.0     3.75      21.41

SIMULATED 1972 HOT       2.90     29.94   319.0     3.77      23.73

COLD TRANSIENT  GRAMS   15.03    164.32  1310.5    17.03      20.11

COLD STABILIZED GRAMS   12.23    119.54  1277.1    11.07      22.80

HOT  TRANSIENT  GRAMS    9.54    104.98  1115.2    17.21      24.81

HOT  STABILIZED GRAMS   10.39    120.03  1191.5    10.49      24.27
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                       ANALYSIS OF KEY-MODE EMISSIONS

             SPEED        HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     2054     0.67    11.41     2092

                MASS     1.78    12.77   361.98     6.08      23.00

LOW  CRUISE 23  CONC     2611     2.27     9.67      605

                MASS     2.09    29.62   290.83     2.59      25.89

IDLE         0  CONC     2778     0.11     8.55      203

                MASS     0.39     0.39    24.77     0.04       0.00

COMPOSITE   20  CONC     2245     0.71               647

                MASS     0.89     6.72              1.91

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                    15900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: ECC78
                                          CAR NUMBER:  CC22

                                          AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 DATS  510    4   97  2  12468 2500  9.4  N   N  AI   Y    A

GRAMS PER MILE          HC        CO      CO2      NOX       MPG

1975 COMPOSITE          2.50     37.28   372.7     3.16     20.28

SIMULATED 1972 COLD     3.45     45.51   386.9     3.17     18.97

SIMULATED 1972 HOT      1.78     31.07   361.9     3.15     21.39

COLD TRANSIENT  GRAMS  19.03    202.03  1386.1    15.11     18.43

COLD STABILIZED GRAMS   6.87    139.31  1515.8     8.65     19.92

HOT  TRANSIENT  GRAMS   6.50     93.73  1158.4    15.01     23.79

HOT  STABILIZED GRAMS   6.04    127.92  1383.3     8.08     21.38

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                     ANALYSIS OF KEY-MODE EMISSIONS

            SPEED       HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC   1150      0.59    11.69     1589

                MASS   0.91     13.03   370.59     4.46     22.61

LOW  CRUISE 23  CONC    690      0.90    10.24      257

                MASS   0.22     16.29   302.11     0.63     27.12

IDLE         0  CONC   1713      1.82     8.66      109

                MASS   0.17      3.65    37.69     0.09      0.00

COMPOSITE   20  CONC   1203      0.82               416

                MASS   0.37      7.39              1.18

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC076
                                              CAR NUMBER:  0023

                                              BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 PLYM  SATEL  8  318  2  12922 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE             HC      CO     CO2     NOX       MPG

1975 COMPOSITE            4.01   35.45   536.0    2.96     14.73

SIMULATED 1972 COLD       4.64   50.37   547.2    2.89     13.89

SIMULATED 1972 HOT        3.54   24.19   527.6    3.01     15.44

COLD TRANSIENT  GRAMS   20.41   297.02  1922.8   10.46     13.25

COLD STABILIZED GRAMS   14.39    80.77  2181.2   11.22     14.57

HOT  TRANSIENT  GRAMS   12.16   100.64  1775.5   11.38     16.48

HOT  STABILIZED GRAMS   13.64    75.69  2183.8   11.56     14.62

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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 45  CONC    3265      1.18    13.65    1589

                MASS    3.39     32.06   520.57    6.08     15.31

LOW  CRUISE 30  CONC    3045      0.51    14.00    1058

                MASS    2.51      9.28   438.25    3.04     19.33

IDLE         0  CONC    3404      0.70    13.48     119

                MASS    0.43      1.77    71.19    0.11      0.00

COMPOSITE   25  CONC    3267      0.96              641

                MASS    1.41     10.20             1.96

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TEST NUMBER: F0085
CAR NUMBER: 0023

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PLYM	SATEL	8	318	2	12938	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.83	32.15	560.4	3.01	14.29
SIMULATED 1972 COLD	4.67	48.75	581.8	3.05	13.23
SIMULATED 1972 HOT	3.18	19.63	544.2	2.97	15.22
COLD TRANSIENT GRAMS	22.45	308.38	2006.9	11.04	12.69
COLD STABILIZED GRAMS	12.61	57.24	2356.5	11.85	13.79
HOT TRANSIENT GRAMS	11.28	90.02	1725.3	10.43	17.09
HOT STABILIZED GRAMS	12.61	66.14	2268.4	10.81	14.21

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3237	1.42	13.42	1318	
		MASS	3.73	45.88	521.50	5.09	14.71
LOW CRUISE	30	CONC	3271	0.82	14.14	875	
		MASS	2.97	16.69	426.35	2.43	19.28
IDLE	0	CONC	2228	0.16	13.51	164	
		MASS	0.55	0.81	94.40	0.12	0.00
COMPOSITE	25	CONC	3057	1.06		560	
		MASS	1.62	13.87		1.65	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

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                                                  TEST NUMBER: E0077
                                                  CAR NUMBER:  0024

                                                  BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 FORD  LTD    8  390  2  35655 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX        MPG

1975 COMPOSITE             5.20    74.50    533.3     5.03      13.36

SIMULATED 1972 COLD        5.87    79.36    545.5     4.93      12.96

SIMULATED 1972 HOT         4.69    71.58    524.1     5.10      13.67

COLD TRANSIENT  GRAMS     24.70   266.55   1879.5    19.72      13.68

COLD STABILIZED GRAMS     19.32   321.17   2211.8    17.28      12.34

HOT  TRANSIENT  GRAMS     15.83   215.66   1718.9    21.00      15.42

HOT  STABILIZED GRAMS     17.79   267.22   2103.3    17.87      13.29

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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED           HC       CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC      3161     1.43    13.85     3152

                MASS      3.70    35.76   518.96    11.28      15.18

LOW  CRUISE 33  CONC      3300     1.36    14.14     2015

                MASS      2.84    24.26   410.89     5.18      19.44

IDLE         0  CONC      5246     5.16    11.66       96

                MASS      0.89    19.27    79.11     0.15       0.00

COMPOSITE   27  CONC      3555     2.03              1187

                MASS      1.82    23.96              3.54

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                      TEST NUMBER: E0084
                                      CAR NUMBER:  0024

                                      AFTER

                   DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 FORD  LTD     8 390  2  35676 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE          HC       CO      CO2      NOX       MPG

1975 COMPOSITE        4.81    78.01    557.9     3.43     12.80

SIMULATED 1972 COLD   5.73    96.21    570.8     3.14     12.03

SIMULATED 1972 HOT    4.11    64.27    546.1     3.64     13.45

COLD TRANSIENT  GRAMS 26.53  462.60   1943.0    11.70     11.80

COLD STABILIZED GRAMS 16.44  258.96   2338.4    11.85     12.26

HOT  TRANSIENT  GRAMS 14.39  223.10   1772.4    15.45     14.99

HOT  STABILIZED GRAMS 15.27  221.61   2260.6    13.49     12.90

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                   ANALYSIS OF KEY-MODE EMISSIONS

          SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC    3473     2.24    13.39    2193

                MASS    4.09    59.91   517.23    8.62      14.26

LOW  CRUISE 33  CONC    3202     0.97    14.41    1550

                MASS    1.91    27.80   417.40    4.32      19.06

IDLE         0  CONC    1776     1.14    14.29     137

                MASS    0.36     6.11    53.82    0.10       0.00

COMPOSITE   27  CONC    3136     1.79              658

                MASS    1.50    22.00              2.76

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                     TEST NUMBER: ECC82
                                     CAR NUMBER:  CC25

                                     BEFORE

                 DYNAMOMETER EMISSION RESULTS USING
                   1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CDCMR IART RCHF A/C EVP EXH PCV TRANS
1970 PONT  CATAL  8  400  2  17070 5000 13.4  Y   N  EM   Y    A

GRAMS PER MILE            HC      CO     CO2     NOX       MPG

1975 COMPOSITE            4.29   67.76   615.4   4.09      12.11

SIMULATED 1972 COLD       5.01   75.78   636.4   3.63      11.45

SIMULATED 1972 HOT        3.75   58.69   595.5   4.45      12.66

COLD TRANSIENT  GRAMS   21.10   310.20  2267.7  12.54      11.52

COLD STABILIZED GRAMS   16.46   288.13  2505.1  14.26      11.39

HOT  TRANSIENT  GRAMS   11.70   152.02  1551.1  15.08      14.34

HOT  STABILIZED GRAMS   16.88   274.42  2462.7  14.41      11.63
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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC      CO     CO2     NOX       MPG

HIGH CRUISE 49  CONC     1104    0.16   13.19    1527

                MASS     0.98    3.87  554.10    7.03      14.76

LOW  CRUISE 33  CONC     1595    0.84   13.68    1633

                MASS     1.50   19.70  419.70    4.44      19.55

IDLE         0  CONC     5733    5.01   10.79     109

                MASS     0.95   18.10   71.14    0.10       0.00

COMPOSITE   27  CONC     1999    1.11             784

                MASS     1.01   14.70            2.41

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: E0089
                                                  CAR NUMBER:  0025

                                                  AFTER


                          DYNAMOMETER EMISSION RESULTS USING
                             1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 PONT  CATAL  8  400  2  17093 5000 13.4  Y   N  EM   Y    A

GRAMS PER MILE              HC        CO      CO2      NOX       MPG

1975 COMPOSITE             5.16     61.56    540.5     5.40     13.61

SIMULATED 1972 COLD        5.65     74.50    557.7     5.10     12.86

SIMULATED 1972 HOT         4.80     52.49    527.5     5.63     14.25

COLD TRANSIENT  GRAMS  21.43   283.17  2015.3    20.10      12.84

COLD STABILIZED GRAMS  20.93   275.55  2163.5    18.14      12.88

HOT  TRANSIENT  GRAMS  15.08   118.16  1752.5    24.05      16.05

HOT  STABILIZED GRAMS  21.53   261.45  2053.6    15.95      13.33
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                    ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC         CO      CO2      NOX        MPG


HIGH CRUISE 49  CONC      1631       0.35    13.03     2734

                MASS      2.00       3.47   522.18    10.65      16.68

LOW  CRUISE 33  CONC      2708       0.92    13.35     2363

                MASS      2.66      15.14   415.40     6.72      15.45

IDLE         0  CONC      6880       3.88    11.28      156

                MASS      1.19      14.65    65.92     0.13       0.00

COMPOSITE   27  CONC      2700       1.04              1249

                MASS      1.54      12.36              3.64

             AUTOMOTIVE TESTING LABORATORIES, INC.
             19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: 00083
                                        CAR NUMBER:  0026

                                        BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 OLDS  VISTA  8  350  4  50224 4500 12.7  Y   N  AI   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE             5.29     95.18   517.8     2.22     13.02

SIMULATED 1972 COLD        6.08    106.87   530.9     2.03     12.40

SIMULATED 1972 HOT         4.69     86.37   508.0     2.36     13.52

COLD TRANSIENT  GRAMS     27.33    442.33  1649.1     7.55     12.36

COLD STABILIZED GRAMS     18.27    359.20  2132.4     7.68     12.45

HOT  TRANSIENT  GRAMS     16.92    288.55  1677.5    10.04     14.86

HOT  STABILIZED GRAMS     17.26    317.32  2112.1     7.80     12.86

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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC    3404      1.89    13.28     1744

                MASS    3.64     47.88   478.42     6.23      15.76

LOW  CRUISE 33  CONC    4169      2.20    12.78      967

                MASS    3.57     40.07   383.87     2.50      19.44

IDLE         0  CONC    1109      5.16     9.36       62

                MASS    0.70     17.91    61.15     0.06       0.00

COMPOSITE   27  CONC    3067      2.42               620

                MASS    1.75     27.87              1.88

                 AUTOMOTIVE TESTING LABORATORIES, INC.
                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 00088
                                              CAR NUMBER:  0026

                                              AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMTR INRT RDHP A/C EVP EXH PCV TRANS
1970 OLDS  VISTA  8  350  4  50245 4500 12.7  Y   N  AI   Y    A

GRAMS PER MILE           HC       CO      CO2     NOX       MPG

1975 COMPOSITE          5.04     76.06   507.2    2.85     13.86

SIMULATED 1972 COLD     5.56     92.49   521.4    2.66     12.99

SIMULATED 1972 HOT      4.34     63.88   456.4    2.59     14.60

COLD TRANSIENT  GRAMS  27.04    431.24  1805.6   10.20     12.69

COLD STABILIZED GRAMS  17.69    262.41  2105.1    9.73     13.32

HOT  TRANSIENT  GRAMS  14.85    215.16  1617.8   12.73     16.23

HOT  STABILIZED GRAMS  15.84    195.17  2017.9   10.61     14.44
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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC       CO      CO2     NOX       MPG

HIGH CRUISE 49  CONC     3578     1.54    13.56    1561

                MASS     3.70    41.12   464.37    6.62     16.47

LOW  CRUISE 33  CONC     4864     1.87    13.36    1357

                MASS     3.40    35.30   373.20    3.57     20.27

IDLE         0  CONC     3473     2.60    11.92      76

                MASS     0.32     5.88    35.54    0.04      0.00

COMPOSITE   27  CONC     3655     1.96              774

                MASS     1.50    17.83             2.14

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                       TEST NUMBER: F0086
                                       CAR NUMBER:  0027

                                       BEFORE

                 DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 FORD  MAVER  6  200  1  16209 2750  9.9  N   Y  EM   Y    A

GRAMS PER MILE          HC       CO      CO2      NOX       MPG

1975 COMPOSITE         2.80    24.19    411.5     5.89     19.43

SIMULATED 1972 COLD    3.14    28.19    425.7     5.92     18.96

SIMULATED 1972 HOT     2.54    21.20    400.7     5.88     20.19

COLD TRANSIENT  GRAMS 13.15   116.53   1534.1    23.57     18.48

COLD STABILIZED GRAMS 10.42    94.63   1658.8    20.80     18.63

HOT  TRANSIENT  GRAMS  8.64    64.38   1346.6    23.28     22.04

HOT  STABILIZED GRAMS 10.00    92.84   1617.6    16.50     19.10

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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED        HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC    2848     0.27    14.29     4088

                MASS    2.44     4.53   364.61    10.18     23.46

LOW  CRUISE 23  CONC    2465     0.19    14.14      817

                MASS    1.47     3.56   281.86     1.47     30.45

IDLE         0  CONC    3508     4.14    12.11       55

                MASS    0.39    11.22    52.82     0.10      0.00

COMPOSITE   20  CONC    2927     0.59              1031

                MASS    1.04     8.70              2.63

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: 80099
                                            CAR NUMBER:  0027

                                            AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ACHP A/C EVP EXH PCV TRANS
1971 FORD  MAVER  6  200  1  16233 2750  9.5  N   Y  EM   Y    A

GRAMS PER MILE           HC        CO      CO2      NOX       MPG

1975 COMPOSITE          2.34     15.08    383.0     4.60     21.19

SIMULATED 1972 COLD     2.59     21.27    355.1     4.80     20.21

SIMULATED 1972 HOT      2.19     17.44    370.8     4.46     21.55

COLD TRANSIENT  GRAMS  10.67     75.44   1417.0    15.88     20.71

COLD STABILIZED GRAMS   8.77     84.05   1576.1    16.11     15.75

HOT  TRANSIENT  GRAMS   7.33     46.73   1204.5    17.32     24.58

HOT  STABILIZED GRAMS   8.16     71.26   1555.7    14.47     20.25

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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED         HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC    2691      0.19    13.85     4142

                MASS    2.21      2.21   360.88     5.84     23.58

LOW  CRUISE 23  CONC    1908      0.10    14.14      583

                MASS    1.25      0.70   306.30     1.20     28.60

IDLE         0  CONC    2732      3.57    12.16      102

                MASS    0.01      9.04    60.20     0.06      0.00

COMPOSITE   20  CONC    2615      0.76               980

                MASS    0.72      6.41              2.48

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0007
                                                CAR NUMBER:  0028

                                                BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

  YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ACHP A/C EVP EXH PCV TRANS
  1971 CHEV  NOVA   6  250  1  15482 3500 11.2  N   Y  EM   Y    A

  GRAMS PER MILE             HC       CO      CO2      NOX       MPG

  1975 COMPOSITE            3.42     39.50   451.1    3.87      16.55

  SIMULATED 1972 COLD       4.60     63.80   451.5    3.52      15.73

  SIMULATED 1972 HOT        2.54     21.32   450.8    4.14      18.05

  COLD TRANSIENT  GRAMS   24.73    390.24  1533.0   13.80      14.61

  COLD STABILIZED GRAMS    5.77     66.80  1853.5   12.61      16.57

  HOT  TRANSIENT  GRAMS    5.25     73.11  1527.5   18.42      15.45

  HOT  STABILIZED GRAMS    9.93     59.35  1758.7   12.45      18.20
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                      ANALYSIS OF KEY-MODE EMISSIONS
              SPEED          HC       CO      CO2      NOX       MPG

  HIGH CRUISE 45  CONC     1675     0.15    14.14     2555

                  MASS     1.76     2.56   465.11     8.35      18.76

  LOW  CRUISE 30  CONC     2889     0.52    14.44     2061

                  MASS     2.16     6.15   332.34     4.42      25.53

  IDLE         0  CONC     4864     4.91    11.46       80

                  MASS     0.50    10.15    35.15     0.05       0.00

  COMPOSITE   25  CONC     2384     1.05              1089

                  MASS     0.59     7.81              2.68

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                   19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 60098
                                              CAR NUMBER:  0028

                                              AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1971 CHEV  NOVA   6  250  1  15503 3500 11.2  N   Y  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE             2.91    33.15    457.6    3.06      15.53

SIMULATED 1972 COLD        4.07    57.70    504.6    2.77      14.64

SIMULATED 1972 HOT         2.03    14.70    452.3    3.28      17.07

COLD TRANSIENT  GRAMS     22.83   375.45   1730.1   10.85      13.55

COLD STABILIZED GRAMS      7.72    57.28   2054.6    9.51      15.81

HOT  TRANSIENT  GRAMS      7.51    52.96   1637.3   14.73      18.64

HOT  STABILIZED GRAMS      5.91    57.84   2025.2   10.12      16.03
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                     ANALYSIS OF KEY-MODE EMISSIONS

          SPEED             HC       CO      CO2      NOX       MPG


HIGH CRUISE 45  CONC       1358     0.24    14.41     1876

                MASS       1.44     5.71   485.32     6.24      17.71

LOW  CRUISE 30  CONC       2061     0.80    14.41     1565

                MASS       2.03    13.22   333.05     3.26      24.72

IDLE         0  CONC       3682     3.15    12.70       79

                MASS       0.47     3.17    52.44     0.05       0.00

COMPOSITE   25  CONC       1941     0.82               818

                MASS       0.84     8.11              2.00

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: 00090
                                          CAR NUMBER:  0029

                                          BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HCHP A/C EVP EXH PCV TRANS
1970 VOLK  SEDAN  4   97  1  27803 2000  8.3  N   N  EM   Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           2.58    44.36   334.7     2.43     21.55

SIMULATED 1972 COLD      2.95    51.89   337.0     2.39     20.81

SIMULATED 1972 HOT       2.29    38.67   332.9     2.45     22.21

COLD TRANSIENT  GRAMS   12.94   255.43  1074.5     9.22     21.43

COLD STABILIZED GRAMS    9.18   133.75  1452.7     8.72     20.26

HOT  TRANSIENT  GRAMS    8.01   156.30  1044.0     9.66     24.72

HOT  STABILIZED GRAMS   10.13   156.25  1525.8     9.50     19.01

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                   ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 37  CONC    1619     0.88    13.76    3384

                MASS    1.02    14.08   290.49    6.67       28.20

LOW  CRUISE 23  CONC    1497     0.65    14.14     757

                MASS    0.77     8.25   222.07    1.32       37.50

IDLE         0  CONC    2503     2.50    13.15      73

                MASS    0.24     5.08    45.38    0.04        0.00

COMPOSITE   20  CONC    1767     1.11              885

                MASS    0.50     7.65             1.77

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: E0106
                                                CAR NUMBER:  0029

                                                AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMTR INRT RCHP A/C EVP EXH PCV TRANS
1970 VOLK  SEDAN  4   97  1  27820  2000  8.3  N   N  EM   Y   S-4

GRAMS PER MILE            HC        CO      CO2      NOX       MPG

1975 COMPOSITE           2.78     38.04    308.5     3.00     23.62

SIMULATED 1972 COLD      3.00     44.72    308.8     3.07     22.92

SIMULATED 1972 HOT       2.62     33.00    308.3     2.55     24.17

COLD TRANSIENT  GRAMS   12.16    217.62    552.6    11.37     23.67

COLD STABILIZED GRAMS   10.37    117.77   1323.7    11.66     22.24

HOT  TRANSIENT  GRAMS    5.26    125.70    588.5    10.48     26.61

HOT  STABILIZED GRAMS   11.38    127.06   1452.1    10.46     19.84

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                        ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     1671      0.58    13.73     4528

                MASS     1.09     14.93   262.66     8.09     28.76

LOW  CRUISE 23  CONC     1619      0.78    13.82     1125

                MASS     0.80     10.39   217.05     1.60     37.75

IDLE         0  CONC     2854      2.35    12.64       67

                MASS     0.27      4.78    38.85     0.05      0.00

COMPOSITE   20  CONC     1881      1.16              1187

                MASS     0.54      7.55              2.15

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                                                  TEST NUMBER: 80100
                                                  CAR NUMBER:  0030

                                                  BEFORE

                     DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 TOYO  COROL  4   71  2  28311 2500  9.4  Y   Y  AI   Y   S-4

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE              4.27    46.23   264.0     2.12     25.43

SIMULATED 1972 COLD         4.24    49.24   269.5     2.09     24.72

SIMULATED 1972 HOT          4.29    43.97   259.9     2.14     26.00

COLD TRANSIENT  GRAMS      14.07   191.73   957.8     7.93     24.94

COLD STABILIZED GRAMS      17.74   177.55  1063.5     7.73     24.51

HOT  TRANSIENT  GRAMS      14.44   152.20   885.6     8.29     27.77

HOT  STABILIZED GRAMS      20.03   171.87  1016.2     8.21     25.40
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                     ANALYSIS OF KEY-MODE EMISSIONS
              SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC       2367     0.67    11.36     2401

                MASS       1.87    12.13   279.72     5.29     29.23

LOW  CRUISE 23  CONC       3304     3.64     8.25      161

                MASS       1.80    44.60   162.00     0.33     37.45

IDLE         0  CONC      10774     2.90     7.66       43

                MASS       0.46     2.84    13.80     0.01      0.00

COMPOSITE   20  CONC       3957     1.35               512

                MASS       0.96     9.77              1.27

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC105
                                                CAR NUMBER:  0030

                                                AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODE  INRT RDHP A/C EVP EXH PCV TRANS
1971 TOYO  COROL  4   71  2  2832P 2500  9.4  Y   Y  AI   Y   S-4

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE             3.28     42.77   303.8     3.24     23.35

SIMULATED 1972 COLD        3.43     50.47   307.3     3.11     22.40

SIMULATED 1972 HOT         3.17     36.95   301.1     3.33     24.12

COLD TRANSIENT  GRAMS    13.11    237.16   1033.0    10.22     22.46

COLD STABILIZED GRAMS    12.59    141.37   1272.1    13.13     22.35

HOT  TRANSIENT  GRAMS    11.20    135.76    585.5    11.87     26.33

HOT  STABILIZED GRAMS    12.60    145.07   1257.2    13.87     21.82
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                   ANALYSIS OF KEY-MODE EMISSIONS
           SPEED            HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC      2402      0.41    11.18     3368

                MASS      1.86      6.52   273.27     7.57     30.71

LOW  CRUISE 23  CONC      3306      3.15     7.76      460

                MASS      2.16     46.74   154.63     0.58     22.40

IDLE         0  CONC      1351      0.40     8.51       65

                MASS      0.18      1.04    25.20     0.03      0.00

COMPOSITE   20  CONC      2307      0.68               787

                MASS      0.81      7.54              1.91

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                15900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: EC103
                                                  CAR NUMBER:  CC31

                                                  BEFORE

                          DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

   YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HCHP A/C EVP EXH PCV TRANS
   1970 DODG  DART   8  318  2  24507 3500 11.2  Y   N  EM   Y    A

   GRAMS PER MILE            HC       CO      CO2      NOX       MPG

   1975 COMPOSITE           3.82    39.06    516.3     1.97     15.10

   SIMULATED 1972 COLD      4.16    48.28    528.9     1.80     14.41

   SIMULATED 1972 HOT       3.56    32.11    506.7     2.09     15.67

   COLD TRANSIENT  GRAMS   17.38   241.30   1755.0     6.57     14.85

   COLD STABILIZED GRAMS   13.80   120.77   2211.9     6.55     14.02

   HOT  TRANSIENT  GRAMS   12.89   120.07   1588.5     8.75     17.88

   HOT  STABILIZED GRAMS   13.61    92.16   2111.3     8.39     14.91
   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                        ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC       CO      CO2      NOX       MPG

   HIGH CRUISE 45  CONC     3925     2.98    12.86     730

                   MASS     4.37    75.08   483.21     2.64     14.48

   LOW  CRUISE 30  CONC     4655     1.17    13.76     1207

                   MASS     3.64    20.33   352.67     3.06     22.47

   IDLE         0  CONC     2118     0.65    13.62     210

                   MASS     0.48     2.78    93.82     0.16      0.00

   COMPOSITE   25  CONC     3674     2.22              561

                   MASS     1.81    22.86              1.22

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                  19900 E.  COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: 00110
                                         CAR NUMBER:  0031

                                         AFTER

                     DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 DODG  DART   8  318  2  24530 3500 11.2  Y   N   EM  Y    A

GRAMS PER MILE              HC      CO      CO2     NOX      MPG

1975 COMPOSITE             5.23    48.03   514.5    3.00    14.68

SIMULATED 1972 COLD        5.67    59.73   525.0    2.49    13.90

SIMULATED 1972 HOT         4.89    35.20   503.5    3.38    15.34

COLD TRANSIENT  GRAMS     23.60   322.75  1858.1    6.85    13.32

COLD STABILIZED GRAMS     18.92   125.23  2109.2   11.81    14.49

HOT  TRANSIENT  GRAMS     17.76   168.81  1667.3   13.58    16.35

HOT  STABILIZED GRAMS     19.70   100.89  2007.2   14.11    15.39
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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC      CO      CO2     NOX      MPG

HIGH CRUISE 45  CONC      4447    2.39    13.33    1396

                MASS      4.75   55.58   493.60    5.28    15.20

LOW  CRUISE 30  CONC      5281    0.87    13.85    2077

                MASS      4.44   15.75   380.39    5.76    21.29

IDLE         0  CONC      2848    0.39    13.31     188

                MASS      0.56    0.63    52.51    0.13     0.00

COMPOSITE   25  CONC      4244    1.73              916

                MASS      2.03   16.09              2.26

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC104
                                              CAR NUMBER:  CC32

                                              BEFORE

                     DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1970 MERC  MARQU  8  429  2  12956 4500 12.7  N   N  EM   Y    A

 GRAMS PER MILE           HC       CO      CO2      NOX       MPG

 1975 COMPOSITE          7.97     65.82    593.3    3.49     12.34

 SIMULATED 1972 COLD    10.26     76.42    605.2    3.34     11.75

 SIMULATED 1972 HOT      6.23     57.82    584.3    3.61     12.82

 COLD TRANSIENT  GRAMS  46.60    339.41   2049.5   12.59     11.90

 COLD STABILIZED GRAMS  30.37    233.73   2488.5   12.07     11.61

 HOT  TRANSIENT  GRAMS  16.36    199.93   1893.4   15.01     14.39

 HOT  STABILIZED GRAMS  15.99    209.63   2425.8   12.20     12.22
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                    ANALYSIS OF KEY-MODE EMISSIONS
            SPEED         HC        CO      CO2      NOX       MPG

 HIGH CRUISE 49  CONC    3647      1.98    13.65     2193

                 MASS    4.31     46.98   500.02     8.13     15.16

 LOW  CRUISE 33  CONC    3404      0.92    14.00     1628

                 MASS    3.21     18.85   426.08     4.85     15.12

 IDLE         0  CONC    3473      2.90    12.86      113

                 MASS    0.69     12.22    88.30     0.10      0.00

 COMPOSITE   27  CONC    3590      1.93               909

                 MASS    1.89     21.67              2.73

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: E0111
                                            CAR NUMBER:  CC32

                                            AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL COMPR IART RCHP A/C EVP EXH PCV TRANS
 1970 MERC  MARQU  8  429  2  12973 4500 12.7  N   N  EM   Y    A

 GRAMS PER MILE          HC       CO      CO2      NOX       MPG

 1975 COMPOSITE         3.98    39.75    650.8    3.06      12.27

 SIMULATED 1972 COLD    4.78    55.55    664.2    2.94      11.62

 SIMULATED 1972 HOT     3.37    27.81    640.6    3.15      12.81

 COLD TRANSIENT  GRAMS 22.61   319.33   2184.8   11.64      11.79

 COLD STABILIZED GRAMS 13.21    97.58   2756.5   10.40      11.46

 HOT  TRANSIENT  GRAMS 12.09   110.95   2008.2   13.19      14.64

 HOT  STABILIZED GRAMS 11.57    69.97   2688.3   10.33      12.10
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                    ANALYSIS OF KEY-MODE EMISSIONS
             SPEED          HC       CO      CO2      NOX       MPG

 HIGH CRUISE 49  CONC      3821     1.97    13.62     1922

                 MASS      4.19    46.65   504.87     7.29      15.06

 LOW  CRUISE 33  CONC      3126     0.83    14.20     1241

                 MASS      2.83    17.03   435.06     3.86      18.76

 IDLE         0  CONC      1480     0.49    13.82      239

                 MASS      0.51     2.92   144.48     0.25       0.00

 COMPOSITE   27  CONC      3321     1.48               806

                 MASS      1.70    15.45              2.47

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC114
                                                CAR NUMBER:  CC33

                                                BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 BUIC  SPORT  8  400  4  39637 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             6.15     72.04     555.9      4.90      12.93

SIMULATED 1972 COLD        6.76     84.65     578.2      4.82      12.16

SIMULATED 1972 HOT         5.69     62.53     539.0      4.96      13.59

COLD TRANSIENT  GRAMS     28.08    365.79    2052.0     22.27      11.80

COLD STABILIZED GRAMS     22.58    269.08    2244.4     13.86      12.52

HOT  TRANSIENT  GRAMS     20.08    199.92    1798.3     23.35      14.94

HOT  STABILIZED GRAMS     22.74    274.02    2200.5     15.33      12.68
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                       ANALYSIS OF KEY-MODE EMISSIONS

            SPEED            HC        CO       CO2       NOX         MPG

HIGH CRUISE 49  CONC       2465      0.47     12.89      3732

                MASS       3.25     13.69    485.38     14.93       17.22

LOW  CRUISE 33  CONC       3341      1.14     10.89      1724

                MASS       3.39     35.17    368.23      5.66       20.51

IDLE         0  CONC       6324      5.46     11.21        74

                MASS       0.93     17.40     69.11      0.10        0.00

COMPOSITE   27  CONC       3260      1.43                1206

                MASS       1.77     18.43                4.42

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC119
                                                CAR NUMBER:  CC33

                                                AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 BUIC  SPORT  8  400  4  39654 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE            HC        CO       CO2      NOX       MPG

1975 COMPOSITE           4.20     37.43     624.3     5.18     12.75

SIMULATED 1972 COLD      4.60     45.65     653.5     5.46     12.03

SIMULATED 1972 HOT       3.90     31.23     602.1     4.57     13.42

COLD TRANSIENT  GRAMS   18.15    207.27    2334.6    27.64     11.96

COLD STABILIZED GRAMS   16.32    135.12    2565.5    13.32     12.10

HOT  TRANSIENT  GRAMS   12.92     55.13    1946.1    23.97     15.17

HOT  STABILIZED GRAMS   15.09    117.45    2234.8    13.24     13.90

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                     ANALYSIS OF KEY-MODE EMISSIONS

            SPEED         HC        CO       CO2      NOX       MPG

HIGH CRUISE 49  CONC     2593      0.61     12.92     3548

                MASS     2.05     17.50    479.85    15.27     17.33

LOW  CRUISE 33  CONC     1955      0.50     12.13     2146

                MASS     2.02     25.67    371.61     6.77     21.29

IDLE         0  CONC     2002      0.73     12.00      318

                MASS     0.52      3.98    100.30     0.25      0.00

COMPOSITE   27  CONC     2422      0.63               1470

                MASS     1.06      5.76               4.78

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC115
                                                CAR NUMBER:  0034

                                                BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMMR INRT RCHP A/C EVP EXH PCV TRANS
1972 CADI  DEVIL  8  472  4   5122 5000 13.4  Y   Y  AI   Y    A

GRAMS PER MILE              HC        CO       CO2      NOX        MPG

1975 COMPOSITE              1.59     46.66    825.5     2.77       9.81

SIMULATED 1972 COLD         1.65     51.65    881.9     2.89       9.19

SIMULATED 1972 HOT          1.39     42.90    785.9     2.68      10.34

COLD TRANSIENT  GRAMS      9.04    237.19   3086.6    13.28       9.32

COLD STABILIZED GRAMS      4.85    150.20   3527.9     8.40       9.07

HOT  TRANSIENT  GRAMS      5.61    171.52   2356.1    11.70      12.12

HOT  STABILIZED GRAMS      5.20    224.39   3278.2     6.38       9.40
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                      ANALYSIS OF KEY-MODE EMISSIONS

           SPEED            HC         CO      CO2      NOX         MPG

HIGH CRUISE 49  CONC       489       0.57    12.81     1328

                MASS      0.78      19.90   657.09     7.39       12.89

LOW  CRUISE 33  CONC       558       1.29    11.44      454

                MASS      1.37      49.08   453.68     1.97       15.48

IDLE         0  CONC      1358       2.66    10.50       58

                MASS      0.51      20.20   130.61     0.09        0.00

COMPOSITE   27  CONC       657       1.00               355

                MASS      0.66      23.30              2.07

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC120
                                                CAR NUMBER:  CC34

                                                AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CDCMR INRT RCHP A/C EVP EXH PCV TRANS
1972 CADI  DEVIL  8  472  4   5139 5000 13.4  Y   Y  AI   Y    A

GRAMS PER MILE           HC       CO      CO2      NOX       MPG

1975 COMPOSITE          1.33     53.92    837.2    2.76      9.62

SIMULATED 1972 COLD     1.44     59.26    891.9    2.97      9.00

SIMULATED 1972 HOT      1.25     49.90    796.0    2.60     10.14

COLD TRANSIENT  GRAMS   6.94    264.76   3174.8   14.14      9.03

COLD STABILIZED GRAMS   3.97    179.69   3514.1    8.11      9.00

HOT  TRANSIENT  GRAMS   5.50    154.56   2456.0   11.42     11.70

HOT  STABILIZED GRAMS   4.40    236.85   3386.8    5.63      9.09

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                    ANALYSIS OF KEY-MODE EMISSIONS

              SPEED        HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC      391      0.83    12.97     1212

                MASS      0.58    37.14   675.41     6.10     12.11

LOW  CRUISE 33  CONC      767      2.13    11.92      335

                MASS      1.12    69.66   546.00     1.44     13.51

IDLE         0  CONC     1353      3.23    10.20       60

                MASS      0.52    25.94   127.43     0.11      0.00

COMPOSITE   27  CONC      613      1.37               345

                MASS      0.59    33.56               1.70

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: EC117
                                                  CAR NUMBER:  CC35

                                                  BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
 1969 FORD  FAIRL  8  289  2  47255 3500 11.2  N   N  EM   Y    A

 GRAMS PER MILE            HC        CO      CO2      NOX        MPG

 1975 COMPOSITE           3.56     27.64    496.7     4.33      16.11

 SIMULATED 1972 COLD      4.36     36.55    515.2     4.53      15.18

 SIMULATED 1972 HOT       3.65     20.91    482.7     4.17      16.89

 COLD TRANSIENT  GRAMS   17.51    173.51   1811.6    20.35      15.19

 COLD STABILIZED GRAMS   15.22    100.65   2052.8    13.65      15.18

 HOT  TRANSIENT  GRAMS   12.15     56.20   1567.6    17.66      15.19

 HOT  STABILIZED GRAMS   13.97     83.33   2031.2    10.62      15.54
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                       ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO      CO2      NOX        MPG

 HIGH CRUISE 45  CONC     3161      0.21    13.53     3500

                 MASS     3.54      5.27   482.86    11.27      17.73

 LOW  CRUISE 30  CONC     3647      0.21    13.28     2084

                 MASS     2.07      3.04   361.81     5.09      23.87

 IDLE         0  CONC     3543      2.95    12.67      144

                 MASS     0.67     11.61    91.19     0.11       0.00

 COMPOSITE   25  CONC     3282      0.70              1293

                 MASS     1.57      9.07              3.50

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: EC129
                                         CAR NUMBER:  0035

                                         AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 FORD  FAIRL  8  289  2  42271 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE           HC       CO      CO2      NOX        MPG

1975 COMPOSITE          3.41     21.75   508.1    3.52       16.10

SIMULATED 1972 COLD     3.60     28.39   528.5    3.94       15.24

SIMULATED 1972 HOT      3.27     16.75   452.6    3.20       16.83

COLD TRANSIENT  GRAMS  15.91    158.57  1910.2   21.51       14.71

COLD STABILIZED GRAMS  11.06     53.94  2053.8    8.05       15.77

HOT  TRANSIENT  GRAMS  13.43     71.69  1641.0   15.93       18.10

HOT  STABILIZED GRAMS  13.64     80.26  2166.0   10.60       14.68
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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC      3219     0.35    14.14    2750

                MASS      3.60     8.02   465.26    9.43       17.35

LOW  CRUISE 30  CONC      3717     0.41    13.65    1356

                MASS      3.23     9.84   387.12    3.80       21.57

IDLE         0  CONC      3271     2.66    13.11     129

                MASS      0.64    11.69    85.20    0.11        0.00

COMPOSITE   25  CONC      3282     0.76              956

                MASS      1.66    10.54             2.86

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              19900 E. COLFAX, AURORA, COLO. 80011
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TEST NUMBER: EC118
CAR NUMBER: 0036

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHEV	MONTE	8	402	4	4662	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	1.70	42.42	680.5	2.89	11.83
SIMULATED 1972 COLD	1.84	43.44	699.6	2.97	11.51
SIMULATED 1972 HOT	1.60	41.65	666.1	2.83	12.09
COLD TRANSIENT GRAMS	8.46	140.97	2270.6	14.72	12.91
COLD STABILIZED GRAMS	5.30	184.84	2576.6	7.53	10.44
HOT TRANSIENT GRAMS	6.68	127.56	2018.8	13.67	14.51
HOT STABILIZED GRAMS	5.10	187.84	2848.9	6.88	10.85

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1042	0.75	11.51	1741	
		MASS	1.46	26.23	541.08	7.96	15.17
LOW CRUISE	33	CONC	1150	1.13	10.72	508	
		MASS	1.49	44.43	456.01	2.03	16.75
IDLE	0	CONC	1584	3.33	10.60	48	
		MASS	0.42	21.42	106.32	0.06	0.00
COMPOSITE	27	CONC	1152	1.22		487	
		MASS	0.79	25.16		2.19	

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX, AURORA, COLO. 80011

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                                          TEST NUMBER: E0130
                                          CAR NUMBER:  0036

                                          AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1972 CHEV  MONTE  8  402  4   4680 4000 12.0  Y   Y  AI   Y    A

GRAMS PER MILE           HC       CO     CO2      NOX       MPG

1975 COMPOSITE          1.88    52.14   666.4    1.99      11.81

SIMULATED 1972 COLD     2.18    57.28   688.1    2.00      11.35

SIMULATED 1972 HOT      1.65    48.28   650.1    1.98      12.18

COLD TRANSIENT  GRAMS  11.13   221.03  2252.6    9.41      12.34

COLD STABILIZED GRAMS   5.19   208.60  2908.0    5.61      10.54

HOT  TRANSIENT  GRAMS   7.19   153.31  1967.9    9.25      14.57

HOT  STABILIZED GRAMS   4.89   199.91  2901.5    5.11      10.61
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                   ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC       CO     CO2      NOX       MPG

HIGH CRUISE 49  CONC     1219     0.90   11.92    1473

                MASS     1.52    32.65  547.44    6.76      14.76

LOW  CRUISE 33  CONC     1080     1.26   11.33     343

                MASS     1.31    43.14  445.35    1.36      17.22

IDLE         0  CONC     1324     2.82   11.09      56

                MASS     0.40    18.69  119.37    0.07       0.00

COMPOSITE   27  CONC     1223     1.24             394

                MASS     0.78    24.88            1.82

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0122
                                        CAR NUMBER:  0037

                                        BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 AMMC  AMBAS  8  360  2  26651 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO       CO2      NOX        MPG

1975 COMPOSITE            5.05    102.95    505.4     3.72      12.96

SIMULATED 1972 COLD       5.78    115.21    516.6     3.52      12.44

SIMULATED 1972 HOT        4.49     93.70    504.1     3.87      13.38

COLD TRANSIENT  GRAMS    24.92    436.76   1790.0    14.77      12.72

COLD STABILIZED GRAMS    18.45    427.35   2084.4    11.60      12.18

HOT  TRANSIENT  GRAMS    15.22    275.41   1656.0    17.40      14.93

HOT  STABILIZED GRAMS    17.25    374.98   2105.6    11.85      12.47

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                     ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO       CO2      NOX        MPG

HIGH CRUISE 49  CONC     3070      1.04     14.38     3299

                MASS     3.59     37.99    508.04    10.97      15.38

LOW  CRUISE 33  CONC     3662      1.71     13.53     2092

                MASS     3.41     33.22    393.37     3.34      19.51

IDLE         0  CONC     3543      5.06     10.91      114

                MASS     0.83     24.28     88.26     0.13       0.00

COMPOSITE   27  CONC     3221      1.79               1244

                MASS     1.80     28.70               3.14

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                   TEST NUMBER: EC135
                                   CAR NUMBER:  0037

                                   AFTER

              DYNAMOMETER EMISSION RESULTS USING
                 1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL COMPR INRT RCHP A/C EVP EXH PCV TRANS
 1970 AMMC  AMHAS  8  360  2  26673 4000 12.0  Y   N  EM   Y    A

 GRAMS PER MILE          HC       CO      CO2     NOX      MPG

 1975 COMPOSITE          4.85     58.70   532.8    3.83    13.91

 SIMULATED 1972 COLD     5.11     73.00   528.2    3.51    13.31

 SIMULATED 1972 HOT      4.66     47.92   526.7    4.08    14.39

 COLD TRANSIENT  GRAMS  22.65    349.00  1786.1   13.73    13.51

 COLD STABILIZED GRAMS  15.70    198.47  2250.4   12.59    13.13

 HOT  TRANSIENT  GRAMS  19.22    160.93  1714.6   17.99    16.03

 HOT  STABILIZED GRAMS  15.75    186.67  2179.8   12.08    13.59
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               ANALYSIS OF KEY-MODE EMISSIONS
          SPEED          HC       CO      CO2     NOX      MPG

 HIGH CRUISE 49  CONC    3237     1.11   13.76    2904

                 MASS    3.59    37.47  496.43   10.43     15.72

 LOW  CRUISE 33  CONC    3821     1.59   13.56    1705

                 MASS    3.37    34.98  387.24    4.76     15.66

 IDLE         0  CONC    2784     1.56   13.28     216

                 MASS    0.71     9.54  111.51    0.19      0.00

 COMPOSITE   27  CONC    3216     1.19            1108

                 MASS    1.72    19.35            3.29

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: EC123
                                                  CAR NUMBER:  CC38

                                                  BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 FORD  GALAX  8  390  2  58331 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE             3.93    50.41    689.6     2.98     11.40

SIMULATED 1972 COLD        4.41    59.70    707.4     2.84     10.93

SIMULATED 1972 HOT         3.58    43.41    676.2     3.09     11.78

COLD TRANSIENT  GRAMS     19.25   277.40   2384.6    10.80     11.28

COLD STABILIZED GRAMS     13.82   170.36   2920.7    10.50     10.61

HOT  TRANSIENT  GRAMS     13.00   155.21   2150.5    12.67     13.35

HOT  STABILIZED GRAMS     13.83   186.24   2814.5    10.03     10.88
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                     ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC      2541      1.05    14.14     1682

                MASS      3.23     34.35   585.90     6.63     13.61

LOW  CRUISE 33  CONC      2698      1.70    13.85      777

                MASS      2.78     44.89   451.10     2.45     15.61

IDLE         0  CONC      1741      0.35    14.20      153

                MASS      0.15      1.52   114.22     0.16      0.00

COMPOSITE   27  CONC      2412      0.94               556

                MASS      1.22     14.53              2.02

                AUTOMOTIVE TESTING LABORATORIES, INC.
                19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: EC134
                                                  CAR NUMBER:  0038

                                                  AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMP  INRT RCHP A/C EVP EXH PCV TRANS
1970 FORD  GALAX  8  390  2  98355 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC        CO       CO2       NOX         MPG

1975 COMPOSITE              4.15     39.80     614.7     3.07       12.90

SIMULATED 1972 COLD         4.19     43.88     637.6     3.07       12.37

SIMULATED 1972 HOT          4.12     36.71     557.4     3.07       13.33

COLD TRANSIENT  GRAMS      17.69    202.48    2170.5    12.92       12.77

COLD STABILIZED GRAMS      13.73    126.65    2611.7    10.10       12.01

HOT  TRANSIENT  GRAMS      17.16    148.71    1868.8    12.94       15.07

HOT  STABILIZED GRAMS      13.63    140.94    2503.4     9.17       12.39

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                      ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO      CO2       NOX          MPG

HIGH CRUISE 49  CONC      3028      1.35    13.91      1937

                MASS      3.75     48.33   551.12      7.49        13.94

LOW  CRUISE 33  CONC      3202      1.87    13.62       904

                MASS      3.24     47.33   447.90      2.93        16.72

IDLE         0  CONC      2367      0.20    14.00       145

                MASS      0.56      1.04   116.96      0.24         0.00

COMPOSITE   27  CONC      2926      1.13                675

                MASS      1.65     18.00               2.35

                   AUTOMOTIVE TESTING LABORATORIES, INC.
                   15900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: FC135
                                          CAR NUMBER:  0039

                                          BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 DODG  POLAR  8  318  2  58220 4000 12.0  N   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX       MPG

1975 COMPOSITE            5.04    75.19    481.1    2.60     14.48

SIMULATED 1972 COLD       6.72   100.06    480.1    2.20     13.52

SIMULATED 1972 HOT        3.78    56.36    481.8    2.51     15.29

COLD TRANSIENT  GRAMS    35.38   556.64   1543.8    5.41     12.85

COLD STABILIZED GRAMS    15.05   193.82   2057.0   11.12     14.23

HOT  TRANSIENT  GRAMS    13.28   228.90   1556.6   10.67     16.60

HOT  STABILIZED GRAMS    13.82   153.72   2015.8   11.22     14.90

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                 ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC      3306     3.08    13.03     1511

                MASS      3.62    71.79   454.09     5.32     15.40

LOW  CRUISE 33  CONC      3717     2.16    13.28     1646

                MASS      3.01    41.27   355.19     4.44     20.73

IDLE         0  CONC      2245     0.55    13.56      146

                MASS      0.43     2.09    84.16     0.10      0.00

COMPOSITE   27  CONC      3157     2.37               801

                MASS      1.52    23.90              2.02

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              15900 E. COLFAX, AURORA, COLO. 80011
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                                                   TEST NUMBER: E0147
                                                   CAR NUMBER:  0039

                                                   AFTER

                           DYNAMOMETER EMISSION RESULTS USING
                              1975 FEDERAL TEST PROCEDURES

     YEAR MAKE  MODEL CYL CID BBL COMPR INRT ROHP A/C EVP EXH PCV TRANS
     1968 DODG  POLAR  8  318  2  58238 4000 12.0  N   N  EM   Y    A

     GRAMS PER MILE             HC        CO      CO2      NOX      MPG

     1975 COMPOSITE            5.37     64.67    474.8     3.26    15.01

     SIMULATED 1972 COLD       6.96     74.16    475.2     2.85    14.51

     SIMULATED 1972 HOT        4.17     57.52    474.4     3.57    15.41

     COLD TRANSIENT  GRAMS   35.54    373.46   1550.7     6.63    14.45

     COLD STABILIZED GRAMS   16.65    182.71   2013.4    14.78    14.57

     HOT  TRANSIENT  GRAMS   14.63    248.67   1544.6    12.00    16.40

     HOT  STABILIZED GRAMS   14.39    152.00   1561.1    13.56    15.13
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                            ANALYSIS OF KEY-MODE EMISSIONS

                  SPEED         HC        CO      CO2      NOX      MPG

     HIGH CRUISE 49  CONC      3647      3.44    12.85     1565

                     MASS      3.85     76.71   456.35     5.58    15.12

     LOW  CRUISE 33  CONC      3891      1.87    13.36     1576

                     MASS      3.15     36.44   362.41     5.08    20.73

     IDLE         0  CONC      2465      0.31    13.33      151

                     MASS      0.45      2.09    77.74     0.10     0.00

     COMPOSITE   27  CONC      3458      2.53               905

                     MASS      1.61     24.60              2.19

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                      19900 E. COLFAX, AURORA, COLO. 80011
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                                   TEST NUMBER: EC133
                                   CAR NUMBER:  0040

                                   BEFORE

              DYNAMOMETER EMISSION RESULTS USING
                 1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COOMR IART ROHP A/C EVP EXH PCV TRANS
1972 FORD  LTD     8 400  2   6450 4000 12.0  Y   Y  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           3.33    38.44    651.3     4.18     12.33

SIMULATED 1972 COLD      3.61    46.06    673.5     4.19     11.75

SIMULATED 1972 HOT       3.12    32.69    634.2     4.17     12.81

COLD TRANSIENT  GRAMS   16.64   224.49   2345.8    17.90     11.82

COLD STABILIZED GRAMS   10.42   120.98   2708.8    13.52     11.69

HOT  TRANSIENT  GRAMS   12.97   124.21   2047.5    17.76     14.23

HOT  STABILIZED GRAMS   10.85   153.61   2560.0    12.10     12.09
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              ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC     2228     0.87    13.54    2904

                MASS     2.76    30.55   583.64    11.64     13.91

LOW  CRUISE 33  CONC     1873     0.51    14.11    1356

                MASS     1.88    12.35   461.51     4.44     18.29

IDLE         0  CONC     2819     2.90    12.45     102

                MASS     0.65    17.03    99.67     0.10     0.00

COMPOSITE   27  CONC     2298     1.16              973

                MASS     1.33    19.91              3.46

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC148
                                              CAR NUMBER:  CC40

                                              AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1972 FORD  LTD    8  400  2   6472 4000 12.0  Y   Y  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX        MPG

1975 COMPOSITE              3.14     35.94   661.7     4.17      12.23

SIMULATED 1972 COLD         3.54     46.55   680.8     4.06      11.64

SIMULATED 1972 HOT          2.84     27.93   647.3     4.26      12.72

COLD TRANSIENT  GRAMS      16.53    254.83  2283.9    17.13      11.88

COLD STABILIZED GRAMS      10.04     94.26  2822.4    13.32      11.42

HOT  TRANSIENT  GRAMS      11.26    115.25  2032.6    18.60      14.45

HOT  STABILIZED GRAMS       9.99     97.24  2723.1    12.35      11.62
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                        ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC        CO      CO2      NOX         MPG

HIGH CRUISE 49  CONC       2332      1.06    13.54     2479

                MASS       2.84     38.24   563.35     5.72       14.08

LOW  CRUISE 33  CONC       2019      0.76    14.14     1261

                MASS       2.01     18.69   461.57     4.13       17.91

IDLE         0  CONC       1671      0.76    13.65      192

                MASS       0.50      6.49   141.49     0.20        0.00

COMPOSITE   27  CONC       2179      0.92               855

                MASS       1.26     15.80              3.04

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               15900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 80143
                                              CAR NUMBER:  0041

                                              BEFORE

                   DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 OLDS  TORON  8  455  4  29035 5000 13.4  Y   Y  EM   Y    A

GRAMS PER MILE            HC        CO      CO2      NOX        MPG

1975 COMPOSITE           3.94     56.64    672.0     3.65      11.51

SIMULATED 1972 COLD      4.28     64.88    700.5     3.65      10.91

SIMULATED 1972 HOT       3.69     50.42    650.4     3.65      12.01

COLD TRANSIENT  GRAMS   16.81    291.94   2567.0    15.09      10.56

COLD STABILIZED GRAMS   15.26    154.65   2687.0    12.25      11.27

HOT  TRANSIENT  GRAMS   12.39    183.51   2151.1    15.12      12.91

HOT  STABILIZED GRAMS   15.12    153.82   2713.9    11.20      11.18
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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED         HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC     1428      0.31    14.35     1859

                MASS     1.89      9.42   631.45     6.78      13.65

LOW  CRUISE 33  CONC     2854      1.44    13.65     1019

                MASS     3.00     39.61   499.21     3.80      15.60

IDLE         0  CONC     2426      1.03    12.19       60

                MASS     0.49      5.95    86.81     0.06       0.00

COMPOSITE   27  CONC     1761      0.55               655

                MASS     1.09     10.52              2.68

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: 80155
                                        CAR NUMBER:  0041

                                        AFTER


                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 OLDS  TORON  8  455  4  29035 5000 13.4  Y   Y  EM   Y    A

GRAMS PER MILE             HC        CO       CO2       NOX        MPG

1975 COMPOSITE            3.83     56.76     744.6     3.02      10.53

SIMULATED 1972 COLD       4.24     65.35     767.0     2.97      10.08

SIMULATED 1972 HOT        3.52     50.28     727.6     3.06      10.89

COLD TRANSIENT  GRAMS    16.65    305.31    2658.1    11.69      10.19

COLD STABILIZED GRAMS    15.18    164.85    3054.8    10.58       9.99

HOT  TRANSIENT  GRAMS    11.19    152.29    2362.6    12.35      12.04

HOT  STABILIZED GRAMS    12.65    119.76    2996.9    10.01      10.63
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                   ANALYSIS OF KEY-MODE EMISSIONS
          SPEED            HC        CO       CO2       NOX        MPG

HIGH CRUISE 49  CONC      523      0.21     14.08      1029

                MASS     0.70      6.43    747.02      5.74      11.73

LOW  CRUISE 33  CONC     2645      1.03     13.58       913

                MASS     2.99     37.10    517.34      3.38      15.22

IDLE         0  CONC     2228      1.01     12.45        82

                MASS     0.53      6.61    105.63      0.08       0.00

COMPOSITE   27  CONC     1059      0.43                 480

                MASS     0.79      9.92                1.93

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: EC144
                                             CAR NUMBER:  0042

                                             BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 PLYM  FURY2  8  318  2  56018 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE           HC       CO      CO2      NOX       MPG

1975 COMPOSITE          7.63    121.41   495.5     2.88     12.54

SIMULATED 1972 COLD     8.90    134.07   505.5     2.84     11.90

SIMULATED 1972 HOT      6.66    111.87   484.5     2.51     13.06

COLD TRANSIENT  GRAMS  38.43    598.55  1754.8    10.61     11.94

COLD STABILIZED GRAMS  28.35    466.97  2066.7    10.68     11.86

HOT  TRANSIENT  GRAMS  21.62    372.03  1565.9    11.11     14.62

HOT  STABILIZED GRAMS  20.47    235.96  2076.8    16.17     13.65

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                   ANALYSIS OF KEY-MODE EMISSIONS

           SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC    3195     1.79    13.68    2347

                MASS    3.56    49.59   458.75    8.82      15.15

LOW  CRUISE 33  CONC    3508     1.20    13.82    2061

                MASS    3.23    24.17   412.83    6.15      15.32

IDLE         0  CONC    2562     0.99    13.56     110

                MASS    0.64     3.82    82.66    0.09       0.00

COMPOSITE   27  CONC    3113     1.49             1056

                MASS    1.66    17.54             3.10

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC157
                                        CAR NUMBER:  CC42

                                        AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1968 PLYM  FURY2  8  318  2  56064 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO       CO2      NOX        MPG

1975 COMPOSITE              6.50     99.92    508.3    3.60       12.98

SIMULATED 1972 COLD         7.94    128.38    518.4    2.97       11.95

SIMULATED 1972 HOT          5.41     78.45    500.7    4.08       13.89

COLD TRANSIENT  GRAMS      35.15    527.25   1783.2   11.15       11.94

COLD STABILIZED GRAMS      24.39    435.57   2105.1   11.11       11.96

HOT  TRANSIENT  GRAMS      16.16    152.78   1650.0   19.45       16.75

HOT  STABILIZED GRAMS      16.68    125.88   2010.7   16.40       15.16
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                    ANALYSIS OF KEY-MODE EMISSIONS
           SPEED            HC       CO       CO2      NOX        MPG

HIGH CRUISE 49  CONC      3161      1.63    13.42     2479

                MASS      3.46     44.55   515.54     5.39      14.92

LOW  CRUISE 33  CONC      3369      0.80    13.53     2278

                MASS      3.04     18.53   421.59     6.58      15.33

IDLE         0  CONC      2489      0.65    12.86       87

                MASS      0.38      1.61    67.15     0.05       0.00

COMPOSITE   27  CONC      3060      1.28              1130

                MASS      1.44     14.25              3.28

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: 0150
                                          CAR NUMBER:  0043

                                          BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1971 DATS  510    4   97  2  13199 2750  9.9  N   Y  AI   Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX      MPG

1975 COMPOSITE           2.76    37.88    306.8    2.83     23.74

SIMULATED 1972 COLD      3.51    53.13    313.1    2.56     21.85

SIMULATED 1972 HOT       2.19    26.38    302.1    3.03     25.41

COLD TRANSIENT  GRAMS   16.94   273.95   1082.8   10.05     20.75

COLD STABILIZED GRAMS    9.38   124.51   1265.2    9.12     23.00

HOT  TRANSIENT  GRAMS    7.04    73.33   1000.9   13.59     28.55

HOT  STABILIZED GRAMS    8.96   123.84   1191.1    8.42     24.25
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                   ANALYSIS OF KEY-MODE EMISSIONS

               SPEED      HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC      927      0.33    10.60    1560

                MASS     0.99      6.34   361.00    5.05      23.81

LOW  CRUISE 23  CONC     1497      0.94     8.85     605

                MASS     1.02     16.79   225.64    1.38      34.89

IDLE         0  CONC     1007      0.86     8.07      46

                MASS     0.09      1.28    24.08    0.04       0.00

COMPOSITE   20  CONC     1002      0.48              478

                MASS     0.41      4.26             1.41

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: 80160
                                        CAR NUMBER:  0043

                                        AFTER

                   DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 DATS  510    4   97  2  13219 2750  9.9  N   Y  AI   Y   S-4

GRAMS PER MILE             HC        CO       CO2      NOX        MPG

1975 COMPOSITE            5.58     36.24     314.9     3.50      22.86

SIMULATED 1972 COLD      10.01     53.20     316.7     3.35      20.62

SIMULATED 1972 HOT        2.23     23.45     313.6     3.62      24.91

COLD TRANSIENT  GRAMS    65.56    281.90    1064.7    13.52      18.95

COLD STABILIZED GRAMS     9.54    117.09    1310.3    11.59      22.49

HOT  TRANSIENT  GRAMS     7.21     58.82    1041.9    15.54      28.09

HOT  STABILIZED GRAMS     9.03    105.95    1308.0    11.53      22.81

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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC        CO       CO2      NOX        MPG

HIGH CRUISE 37  CONC      2019      0.57     10.91     2262

                MASS      1.76      9.33    294.03     5.55      28.34

LOW  CRUISE 23  CONC      1480      0.94      9.14      517

                MASS      1.18     17.01    236.95     1.22      33.30

IDLE         0  CONC       976      0.37      7.70       58

                MASS      0.15      0.56     28.56     0.03       0.00

COMPOSITE   20  CONC      1772      0.55                591

                MASS      0.67      4.57               1.49

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                15900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC151
                                              CAR NUMBER:  CC44

                                              BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1972 VOLV  142S   4  121  2   6185 2750  9.9  N   Y  EM   Y   S-4

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             4.03     28.98     324.2      2.60      23.28

SIMULATED 1972 COLD        4.71     33.41     326.1      2.59      22.63

SIMULATED 1972 HOT         3.53     25.64     322.8      2.61      23.79

COLD TRANSIENT  GRAMS     20.90    138.66    1149.7     10.69      22.67

COLD STABILIZED GRAMS     14.40    111.89    1255.7      8.77      22.60

HOT  TRANSIENT  GRAMS     12.06     80.41    1125.4     10.79      25.20

HOT  STABILIZED GRAMS     15.03    111.23    1302.5      8.03      22.49

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                      ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO       CO2       NOX        MPG

HIGH CRUISE 37  CONC      2586      0.79     13.97      2092

                MASS      1.89     14.09    361.11      5.05      22.88

LOW  CRUISE 23  CONC      2437      1.00     12.86       469

                MASS      1.35     16.35    244.13      0.84      32.49

IDLE         0  CONC      3473      2.82     10.43        59

                MASS      0.46      5.51     28.90      0.03       0.00

COMPOSITE   20  CONC      2732      1.15                 547

                MASS      0.93      8.85                1.31

                  AUTOMOTIVE TESTING LABORATORIES, INC.
                  19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: EC159
                                         CAR NUMBER:  CC44

                                         AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 VOLV  142S   4  121  2   6206 2750  9.9  N   Y  EM   Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           8.69     89.95   309.0     2.20     18.64

SIMULATED 1972 COLD     13.45    116.62   303.0     1.76     16.84

SIMULATED 1972 HOT       5.10     69.83   313.5     2.53     20.27

COLD TRANSIENT  GRAMS  78.96    554.56    538.1     4.43     15.78

COLD STABILIZED GRAMS  21.88    320.12   1334.3     8.74     17.58

HOT  TRANSIENT  GRAMS  16.34    203.60   1016.8    10.25     23.41

HOT  STABILIZED GRAMS  22.23    295.84   1357.0     8.88     17.74
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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO     CO2     NOX        MPG

HIGH CRUISE 37  CONC     3508      2.74   12.72    1744

                MASS     2.16     37.65  273.14    2.67      26.26

LOW  CRUISE 23  CONC     4238      4.81   10.58     279

                MASS     2.08     57.05  202.18    0.49      29.84

IDLE         0  CONC     8758      6.59    7.70      45

                MASS     0.81     16.47   29.28    0.02       0.00

COMPOSITE   20  CONC     4541      3.60             423

                MASS     1.28     26.25            0.71

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC221
                                        CAR NUMBER:  0045

                                        BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 VOLK  1600   4   97  C  48183 2500  9.4  N   N  EM   Y   S-4

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             2.41     22.61     346.6      2.86      22.85

SIMULATED 1972 COLD        3.00     29.86     349.0      3.05      21.97

SIMULATED 1972 HOT         1.96     17.13     344.8      2.72      23.56

COLD TRANSIENT  GRAMS     14.16    174.02    1155.0     13.25      21.48

COLD STABILIZED GRAMS      8.36     45.91    1422.5      9.65      22.45

HOT  TRANSIENT  GRAMS      6.35     78.61    1163.5     10.73      24.87

HOT  STABILIZED GRAMS      7.95     69.14    1454.8     10.42      21.05
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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO       CO2       NOX         MPG

HIGH CRUISE 37  CONC      1254      0.19     15.09      3368

                MASS      0.91      2.88    361.04      8.27       24.17

LOW  CRUISE 23  CONC      1045      0.10     13.71       624

                MASS      0.66      0.83    270.04      1.27       32.57

IDLE         0  CONC      2419      0.21     13.22        61

                MASS      0.27      0.16     53.48      0.09        0.00

COMPOSITE   20  CONC      1444      0.17                 829

                MASS      0.48      0.92                2.15

               AUTOMOTIVE TESTING LABORATORIES, INC.
               19900 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC234
                                                CAR NUMBER:  0045

                                                AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODMR INRT RDHP A/C EVP EXH PCV TRANS
1970 VOLK  1600   4   97  0  48204 2500  9.4  N   N  EM   Y   S-4

GRAMS PER MILE            HC        CO       CO2       NOX        MPG

1975 COMPOSITE           2.43     24.85    359.4      3.01       21.93

SIMULATED 1972 COLD      2.98     31.05    365.0      2.87       21.04

SIMULATED 1972 HOT       2.01     20.18    355.1      3.12       22.65

COLD TRANSIENT  GRAMS   14.10    173.85   1235.4     11.16       20.93

COLD STABILIZED GRAMS    8.29     58.99   1502.3     10.35       21.15

HOT  TRANSIENT  GRAMS    6.77     52.35   1161.1     13.03       24.49

HOT  STABILIZED GRAMS    7.90     63.03   1499.9     10.67       21.11
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                        ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO       CO2       NOX        MPG

HIGH CRUISE 37  CONC      941      0.19     14.14     2726

                MASS     0.77      2.58    320.46     6.11       27.24

LOW  CRUISE 23  CONC      868      0.10     13.17      635

                MASS     1.09      1.23    257.35     1.69       33.90

IDLE         0  CONC     1685      0.21     12.64       67

                MASS     0.26      0.39     49.84     0.05        0.00

COMPOSITE   20  CONC     1069      0.17                714

                MASS     0.47      1.03               1.71

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: FC222
                                         CAR NUMBER:  0046

                                         BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT PCHP A/C EVP EXH PCV TRANS
1971 DATS  510    4   71  2  24774 2250  8.8  N   N  EM   Y   S-4

GRAMS PER MILE           HC        CO       CO2      NOX       MPG

1975 COMPOSITE           2.41      27.07    262.3    1.65      28.50

SIMULATED 1972 COLD      2.71      29.18    268.7    1.63      27.56

SIMULATED 1972 HOT       2.19      25.48    257.4    1.66      29.26

COLD TRANSIENT  GRAMS   11.98     127.19    941.3    6.54      27.57

COLD STABILIZED GRAMS    8.37      91.68   1073.6    5.69      27.56

HOT  TRANSIENT  GRAMS    8.04      99.43    857.1    6.80      31.29

HOT  STABILIZED GRAMS    8.57     101.27   1042.1    5.20      27.91

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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED         HC        CO       CO2      NOX       MPG

HIGH CRUISE 37  CONC     3334      0.69    12.88     2092

                MASS     1.69      9.09   302.84     4.19      27.62

LOW  CRUISE 23  CONC     3306      1.59    14.74      605

                MASS     1.32     15.07   199.83     0.83      39.11

IDLE         0  CONC     3376      1.13    14.14       81

                MASS     0.24      2.92    24.50     0.02      0.00

COMPOSITE   20  CONC     3339      0.81               594

                MASS     0.73      5.81              1.10

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             19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC233
                                        CAR NUMBER:  CC46

                                        AFTER

                     DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 DATS  510    4   71  2  24797 2250  8.8  N   N  EM   Y   S-4

GRAMS PER MILE           HC       CO      CO2      NOX       MPG

1975 COMPOSITE          2.20    28.59    254.4     1.75     29.08

SIMULATED 1972 COLD     2.72    32.11    264.1     1.58     27.59

SIMULATED 1972 HOT      1.81    25.93    247.0     1.87     30.34

COLD TRANSIENT  GRAMS  11.13   138.89    948.1     5.32     27.05

COLD STABILIZED GRAMS   9.29   101.92   1033.0     6.53     28.05

HOT  TRANSIENT  GRAMS   4.26    52.57    819.7     7.52     33.22

HOT  STABILIZED GRAMS   9.35    93.38   1054.8     6.77     27.85
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                  ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC    2871     0.85    14.41     2634

                MASS    1.78    14.25   286.45     5.72     28.32

LOW  CRUISE 23  CONC    3473     2.20    13.28      777

                MASS    1.45    18.20   156.36     0.91     38.79

IDLE         0  CONC    3473     1.49    12.59       78

                MASS    0.25     2.69    27.69     0.09      0.00

COMPOSITE   20  CONC    3045     1.07               741

                MASS    0.77     7.27              1.48

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           19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: EC232
                                          CAR NUMBER:  CC47

                                          BEFORE

                   DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INPT RCHP A/C EVP EXH PCV TRANS
1969 MERC  COMET  8  302  2  24514 3500 11.2  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           5.34    37.26    510.8    4.74      15.19

SIMULATED 1972 COLD      5.32    42.99    525.3    4.70      14.51

SIMULATED 1972 HOT       5.35    32.95    456.9    4.77      15.75

COLD TRANSIENT  GRAMS   21.25   197.91   1884.1   19.10      14.37

COLD STABILIZED GRAMS   18.69   124.50   2085.8   16.17      14.65

HOT  TRANSIENT  GRAMS   21.43   122.60   1640.5   19.63      17.10

HOT  STABILIZED GRAMS   17.59   100.00   1874.3   14.58      16.43
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                   ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC       CO      CO2      NOX       MPG

HIGH CRUISE 45  CONC     3647     0.58    15.14    3221

                MASS     4.26    17.61   458.61   11.13      16.50

LOW  CRUISE 30  CONC     4447     0.55    14.56    2324

                MASS     3.93     5.81   354.16    6.15      21.10

IDLE         0  CONC     4864     0.21    11.79     109

                MASS     1.01     0.88    64.21    0.07       0.00

COMPOSITE   25  CONC     3953     0.48             1290

                MASS     2.19     6.06             3.63

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: E0239
                                              CAR NUMBER:  0047

                                              AFTER

                     DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

   YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
   1969 MERC  COMET  8  302  2  24541 3500 11.2  Y   N  EM   Y    A

   GRAMS PER MILE            HC       CO     CO2      NOX       MPG

   1975 COMPOSITE           5.37    42.61   490.5    4.89     15.50

   SIMULATED 1972 COLD      5.96    44.26   504.7    4.91     15.01

   SIMULATED 1972 HOT       4.92    41.37   479.8    4.87     15.99

  COLD TRANSIENT  GRAMS  24.44    153.26  1794.8   19.95     15.38

  COLD STABILIZED GRAMS  20.27    178.67  1990.6   16.91     14.68

  HOT  TRANSIENT  GRAMS  16.62    131.61  1607.5   19.61     17.41

  HOT  STABILIZED GRAMS  19.37    128.27  1966.7   17.12     15.36
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                    ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC       CO     CO2      NOX       MPG

  HIGH CRUISE 45  CONC     3786     0.83   14.44    3507

                  MASS     4.22    22.22  492.99   12.14     16.45

  LOW  CRUISE 30  CONC     4273     0.61   14.06    2943

                  MASS     2.74    13.10  387.44    7.80     21.37

  IDLE          0 CONC     2645     0.18   13.39     149

                  MASS     0.48     0.40   70.29    0.12      0.00

  COMPOSITE    25 CONC     3630     0.64            1533

                  MASS     1.69     7.27            4.16

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: E0240
                                                  CAR NUMBER:  0048

                                                  BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH DCV TRANS
1968 MERC  COMET  6  200  1  35986 3500 11.2  N   N  AI   Y   S-3

GRAMS PER MILE              HC       CC      CO2     NOX      MPG

1975 COMPOSITE             4.33    87.74   378.3    1.46     16.81

SIMULATED 1972 COLD        4.88    96.50   391.3    1.44     15.95

SIMULATED 1972 HOT         3.92    81.14   368.5    1.48     17.52

COLD TRANSIENT  GRAMS     20.66   379.58  1328.2    6.37     16.35

COLD STABILIZED GRAMS     15.94   345.15  1606.2    4.45     15.59

HOT  TRANSIENT  GRAMS     13.44   263.39  1157.8    6.67     20.14

HOT  STABILIZED GRAMS     14.77   314.45  1592.5    4.41     16.07
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                        ANALYSIS OF KEY-MODE EMISSIONS
              SPEED         HC       CO      CO2     NOX       MPG

HIGH CRUISE 45  CONC      3925     3.06    11.72    1492

                MASS      3.47    63.40   342.78    4.35     19.64

LOW  CRUISE 30  CONC      3821     3.49     8.35     525

                MASS      3.11    61.96   234.48    1.29     26.06

IDLE         0  CONC      1393     2.24     9.78      56

                MASS      0.24    15.85   108.54    0.04      0.00

COMPOSITE   25  CONC      3453     2.81              448

                MASS      1.36    32.85             1.24

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                  19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC245
                                        CAR NUMBER:  0048

                                        AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1968 MERC  COMET  6  200  1  35957 3500 11.2  N   N  AI   Y   S-3

 GRAMS PER MILE              HC       CO      CO2      NOX      MPG

 1975 COMPOSITE             5.03    74.97    366.5    2.30     17.80

 SIMULATED 1972 COLD        5.71    87.73    379.8    2.15     16.62

 SIMULATED 1972 HOT         4.92    65.34    356.4    2.41     18.81

 COLD TRANSIENT  GRAMS   24.42   385.07   1356.0    9.14     15.95

 COLD STABILIZED GRAMS   18.43   272.88   1492.5    7.00     17.32

 HOT  TRANSIENT  GRAMS   15.45   217.17   1180.4   11.06     20.70

 HOT  STABILIZED GRAMS   16.38   255.45   1534.9    7.58     17.25
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                   ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC       CO      CO2      NOX      MPG

 HIGH CRUISE 45  CONC     4030     2.90    11.51     1627

                 MASS     2.81    48.20   346.27     2.95     20.67

 LOW  CRUISE 30  CONC     4169     3.31     8.37      689

                 MASS     3.57    58.29   247.75     1.85     25.40

 IDLE         0  CONC     3237     0.41     8.76      240

                 MASS     0.82    14.24   110.19     1.02      0.00

 COMPOSITE   25  CONC     3900     2.35              595

                 MASS     1.60    27.61              1.60

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: 80241
                                             CAR NUMBER:  0049

                                             BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 CHRY  NEWYO  8  383  4  38455 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE              HC      CO     CO2     NOX      MPG

1975 COMPOSITE             6.74   79.76   584.6    3.50    12.18

SIMULATED 1972 COLD        8.21   82.04   597.0    3.21    11.84

SIMULATED 1972 HOT         5.63   78.03   575.3    3.72    12.44

COLD TRANSIENT  GRAMS     39.01  334.53  2037.6    9.84    12.10

COLD STABILIZED GRAMS     22.59  280.80  2435.8   14.22    11.61

HOT  TRANSIENT  GRAMS     19.66  304.44  1874.9   13.66    13.46

HOT  STABILIZED GRAMS     21.73  262.22  2372.5   13.01    12.02
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                      ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC       CO     CO2     NOX       MPG

HIGH CRUISE 49  CONC      3891     2.90   13.28    1627

                MASS      4.84    78.24  535.57    6.73     13.22

LOW  CRUISE 33  CONC      4064     2.01   13.51    1452

                MASS      4.17    46.76  435.67    4.98     17.05

IDLE         0  CONC      4238     3.40   11.54      51

                MASS      0.90    15.76   85.21    0.07      0.00

COMPOSITE   27  CONC      3972     2.75             738

                MASS      2.25    34.85            2.42

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: FC246
                                                  CAR NUMBER:  0049

                                                  AFTER

                          DYNAMOMETER EMISSION RESULTS USING
                             1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1968 CHRY  NEWYO  8  383  4  38471 4500 12.7  Y   N  EM   Y    A

 GRAMS PER MILE             HC        CO       CO2      NOX        MPG

 1975 COMPOSITE            6.51     94.50     601.8     3.15      11.55

 SIMULATED 1972 COLD       7.71    112.15     610.0     2.87      10.99

 SIMULATED 1972 HOT        5.60     81.18     595.6     3.36      12.02

 COLD TRANSIENT  GRAMS   35.38    546.14    2049.3     8.16      10.77

 COLD STABILIZED GRAMS   22.42    295.02    2526.0    13.40      11.20

 HOT  TRANSIENT  GRAMS   19.61    313.84    1940.8    11.81      13.02

 HOT  STABILIZED GRAMS   22.43    320.55    2428.2    11.55      11.42
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                           ANALYSIS OF KEY-MODE EMISSIONS

              SPEED         HC        CO       CO2      NOX        MPG

 HIGH CRUISE 49  CONC     3925      3.31     12.89     1125

                 MASS     4.77     90.88    519.61     4.70      13.14

 LOW  CRUISE 33  CONC     3960      2.66     13.05     1010

                 MASS     4.19     69.64    426.78     3.04      16.21

 IDLE         0  CONC     4169      4.06     11.16       67

                 MASS     1.01     21.73     93.42     0.09       0.00

 COMPOSITE   27  CONC     3973      3.21               518

                 MASS     2.30     44.35               1.64

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                     19900 E. COLFAX, AURORA, COLO. 80011
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                                      TEST NUMBER: 80242
                                      CAR NUMBER:  0090

                                      BEFORE

              DYNAMOMETER EMISSION RESULTS USING
                  1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INPT RCHP A/C EVP EXH PCV TRANS
1971 FORD  PINTO  4   94  1  32609 2250  8.8  N   Y  EM   Y   S-4

GRAMS PER MILE          HC        CO      CO2       NOX        MPG

1975 COMPOSITE          4.60     22.47   293.9      2.36      25.91

SIMULATED 1972 COLD     4.92     32.10   301.1      2.28      24.26

SIMULATED 1972 HOT      4.35     15.20   288.5      2.42      27.31

COLD TRANSIENT  GRAMS  16.02    194.42  1032.0      8.27      23.42

COLD STABILIZED GRAMS  20.90     46.32  1226.2      8.81      25.11

HOT  TRANSIENT  GRAMS  11.70     67.68   937.4      9.31      30.08

HOT  STABILIZED GRAMS  20.30     53.06  1660.8      8.30      18.96
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                  ANALYSIS OF KEY-MODE EMISSIONS

              SPEED         HC        CO      CO2      NOX        MPG

HIGH CRUISE 37  CONC       2645      0.78    13.91     2886

                MASS       1.79     12.29   295.75     5.99      27.77

LOW  CRUISE 23  CONC       2437      0.52    13.76      593

                MASS       1.24      6.28   215.89     0.91      38.78

IDLE         0  CONC       4343      0.16    11.16       94

                MASS       0.71      0.56    37.58     0.05       0.00

COMPOSITE   20  CONC       2932      0.60               741

                MASS       1.09      4.13              1.55

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                      TEST NUMBER: EC252
                                      CAR NUMBER:  0050

                                      AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1971 FORD  PINTO  4   94  1  32625 2250  8.8  N   Y  EM   Y   S-4

GRAMS PER MILE            HC        CO      CO2      NOX       MPG

1975 COMPOSITE           2.50     25.29    310.5     3.08      24.86

SIMULATED 1972 COLD      2.79     31.68    316.0     3.06      23.77

SIMULATED 1972 HOT       2.28     20.48    306.4     3.09      25.76

COLD TRANSIENT  GRAMS   11.79    149.01   1035.4    11.52      24.87

COLD STABILIZED GRAMS    9.15     88.60   1334.9    11.44      22.81

HOT  TRANSIENT  GRAMS    7.95     64.98    962.8    11.72      29.82

HOT  STABILIZED GRAMS    9.80    151.80   1355.5    11.30      21.14

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                     ANALYSIS OF KEY-MODE EMISSIONS

          SPEED .        HC        CO      CO2       NOX       MPG

HIGH CRUISE 37  CONC    2784      0.67    14.11     3036

                MASS    1.96     10.57   296.79     7.88      27.86

LOW  CRUISE 23  CONC    3202      1.07    13.33      555

                MASS    1.33     14.57   199.23     0.86      39.35

IDLE         0  CONC    2670      1.42    13.05      116

                MASS    0.23      3.58    41.97     0.05       0.00

COMPOSITE   20  CONC    2808      0.82               783

                MASS    0.79      6.54              1.97

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                            TEST NUMBER: EC243
                                            CAR NUMBER:  0051

                                            BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                     1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1968 OPEL  KADET  4   91  2  46438 2250  8.8  N   N  NO   Y   S-4

GRAMS PER MILE           HC       CO      CO2       NOX       MPG

1975 COMPOSITE          16.52    86.74   299.0      3.49     18.26

SIMULATED 1972 COLD     16.64    93.49   285.4      3.53     18.36

SIMULATED 1972 HOT      16.43    81.69   305.2      3.46     18.19

COLD TRANSIENT  GRAMS  45.01   335.14  1004.0    14.46      19.43

COLD STABILIZED GRAMS  79.82   366.07  1136.2    11.98      17.45

HOT  TRANSIENT  GRAMS  43.43   246.27  1183.0    13.95      19.04

HOT  STABILIZED GRAMS  82.39   368.75  1350.6    11.64      15.65

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                 ANALYSIS OF KEY-MODE EMISSIONS

           SPEED        HC       CO      CO2      NOX         MPG

HIGH CRUISE 37  CONC    3786     4.03    12.16    2169

                MASS    2.86    74.47   322.19    5.82       19.87

LOW  CRUISE 23  CONC   10426     3.93    10.08    1396

                MASS    6.33    57.50   212.20    2.40       27.61

IDLE         0  CONC   29965     8.47     3.92      22

                MASS    8.41    22.41    14.70    0.02        0.00

COMPOSITE   20  CONC    9255     4.63              800

                MASS    6.73    35.34             1.75

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: EC253
                                             CAR NUMBER:  0051

                                             AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 OPEL  KADET  4   91  2  46459 2250  8.8  N   N  NO   Y   S-4

GRAMS PER MILE            HC        CO       CO2       NOX        MPG

1975 COMPOSITE           17.02     98.52    295.4      2.97      17.67

SIMULATED 1972 COLD      17.55    109.15    282.0      2.92      17.49

SIMULATED 1972 HOT       16.62     90.51    305.4      3.01      17.80

COLD TRANSIENT  GRAMS    52.68    366.21   1025.2     12.43      18.39

COLD STABILIZED GRAMS    79.98    452.38   1089.8      9.47      16.72

HOT  TRANSIENT  GRAMS    45.70    226.43   1200.9     13.12      19.10

HOT  STABILIZED GRAMS    86.82    433.33   1393.8     10.35      14.59

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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED             HC        CO       CO2       NOX        MPG

HIGH CRUISE 37  CONC      4169      4.42     11.92      1899

                MASS      3.35     74.16    321.86      4.91      19.83

LOW  CRUISE 23  CONC     10079      6.52      9.30       682

                MASS      4.88     87.04    192.89      1.23      25.81

IDLE         0  CONC     25862      8.47      4.92        44

                MASS      7.33     36.50     25.79      0.03       0.00

COMPOSITE   20  CONC      8743      5.17                 562

                MASS      6.04     51.51                1.35

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: EC244
                                             CAR NUMBER:  CC52

                                             BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 FORD  FAIRL  8  289  2  42332 3500 11.2  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE            5.57     36.61   511.7    3.68      15.17

SIMULATED 1972 COLD       6.30     51.92   519.5    3.49      14.34

SIMULATED 1972 HOT        5.02     25.07   505.8    3.83      15.87

COLD TRANSIENT  GRAMS  27.33    298.58  1782.2   13.66      13.90

COLD STABILIZED GRAMS  19.93     90.82  2114.0   12.51      14.78

HOT  TRANSIENT  GRAMS  17.72     97.17  1679.6   16.19      17.21

HOT  STABILIZED GRAMS  19.40     89.22  2132.1   12.80      14.69
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                     ANALYSIS OF KEY-MODE EMISSIONS
            SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC      4516     0.83    13.76    2324

                MASS      5.01    26.38   481.64    8.47       16.52

LOW  CRUISE 30  CONC      2889     0.35    13.28    1419

                MASS      2.62     8.44   364.79    3.92       23.09

IDLE         0  CONC      1497     0.43    13.53     163

                MASS      0.45     1.19    86.58    0.11        0.00

COMPOSITE   25  CONC      3794     0.66              896

                MASS      1.87     8.31             2.66

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                                                TEST NUMBER: E0251
                                                CAR NUMBER:  0052

                                                AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 FORD  FAIRL  8  289  2  42320 3500 11.2  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX        MPG

1975 COMPOSITE              5.27    33.61    503.6    3.60       15.54

SIMULATED 1972 COLD         5.67    39.09    520.2    3.69       14.85

SIMULATED 1972 HOT          4.98    29.48    491.0    3.53       16.10

COLD TRANSIENT  GRAMS  22.84    186.61  1865.1    15.57      14.57

COLD STABILIZED GRAMS  19.66    106.57  2026.5    11.70      15.13

HOT  TRANSIENT  GRAMS  17.67    114.55  1646.0    14.77      17.27

HOT  STABILIZED GRAMS  19.82    117.76  2082.2    10.82      14.72

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                      ANALYSIS OF KEY-MODE EMISSIONS

              SPEED        HC        CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC     4899      0.94    13.76     2324

                MASS     5.24     30.76   477.99     7.53       16.40

LOW  CRUISE 30  CONC     5212      0.87    13.19     1463

                MASS     4.36     20.12   364.57     3.68       21.72

IDLE         0  CONC     3126      1.61    13.33      136

                MASS     0.56      7.12    84.31     0.11        0.00

COMPOSITE   25  CONC     4609      1.01               858

                MASS     2.16     14.49              2.50

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                                                TEST NUMBER: EC254
                                                CAR NUMBER:  0053

                                                BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1972 VOLVO 142S   4  121  2  19175 2750  9.9  N   Y  EM   Y   S-4

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             8.28     87.56     283.9     1.23      19.89

SIMULATED 1972 COLD        9.44     89.14     253.5     1.34      19.35

SIMULATED 1972 HOT         8.16     86.36     276.6     1.14      20.33

COLD TRANSIENT  GRAMS     26.81    279.33    1085.0     6.61      20.21

COLD STABILIZED GRAMS     36.48    389.20    1116.3     3.42      18.60

HOT  TRANSIENT  GRAMS     24.69    256.51     958.1     5.15      22.54

HOT  STABILIZED GRAMS     36.05    383.61    1204.4     3.62      17.84
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                      ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO       CO2       NOX        MPG

HIGH CRUISE 37  CONC      4343      3.68     12.19      1149

                MASS      3.19     66.37    308.23      2.77      21.07

LOW  CRUISE 23  CONC      5803      6.24     10.13       208

                MASS      3.09     82.75    191.61      0.36      26.87

IDLE         0  CONC     23637      8.47      6.92        44

                MASS      3.49     19.69     26.83      0.03       0.00

COMPOSITE   20  CONC      8009      4.64                 251

                MASS      3.37     38.34                0.71

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                                                 TEST NUMBER: EC262
                                                 CAR NUMBER:  CC53

                                                 AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL CODE# INRT RDHP A/C EVP EXH PCV TRANS
1972 VOLVO 142S   4  121  2  19195 2750  9.9  N   Y  EM   Y   S-4

GRAMS PER MILE            HC        CO       CO2       NOX        MPG

1975 COMPOSITE           4.73     66.88     307.4      1.53      20.83

SIMULATED 1972 COLD      4.93     67.50     318.3      1.67      20.24

SIMULATED 1972 HOT       4.59     66.37     299.2      1.42      21.30

COLD TRANSIENT  GRAMS  16.99    209.99   1141.6      8.02      21.32

COLD STABILIZED GRAMS  19.98    296.68   1249.9      4.50      19.32

HOT  TRANSIENT  GRAMS  14.42    201.11    998.8      6.14      23.90

HOT  STABILIZED GRAMS  19.87    288.73   1173.1      4.23      20.29
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                    ANALYSIS OF KEY-MODE EMISSIONS
            SPEED         HC        CO       CO2       NOX        MPG

HIGH CRUISE 37  CONC     2752      2.78     12.81      1444

                MASS     2.75     49.56    329.29      3.51      21.62

LOW  CRUISE 23  CONC     4516      4.77     11.36       224

                MASS     2.41     60.37    220.29      0.37      27.99

IDLE         0  CONC     5212      6.17     10.04        63

                MASS     0.53     15.13     37.57      0.03       0.00

COMPOSITE   20  CONC     4098      3.47                 359

                MASS     1.30     28.79                0.88

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                   TEST NUMBER: EC255
                                   CAR NUMBER:  0054

                                   BEFORE

                DYNAMOMETER EMISSION RESULTS USING
                  1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 MERC  MONTE  8  400  2   5539 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE           HC      CO      CO2      NOX      MPG

1975 COMPOSITE          4.01    58.13   554.5    3.49     12.74

SIMULATED 1972 COLD     4.45    69.37   616.0    2.38     12.05

SIMULATED 1972 HOT      3.67    45.65   578.5    4.33     13.32

COLD TRANSIENT  GRAMS  19.06   291.03  2216.2    2.13     11.89

COLD STABILIZED GRAMS  14.34   229.22  2404.1   15.74     12.20

HOT  TRANSIENT  GRAMS  13.18   143.17  1527.7   16.72     14.75

HOT  STABILIZED GRAMS  13.36   204.10  2341.5   13.55     12.68
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                ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC      CO      CO2      NOX      MPG

HIGH CRUISE 49  CONC    2075    0.65    14.53    3175

                MASS    2.39   19.17   538.55   11.84     15.44

LOW  CRUISE 33  CONC    2245    0.90    13.85    1685

                MASS    1.79   25.87   414.25    4.83     15.34

IDLE         0  CONC    2750    1.91    13.42     100

                MASS    0.32    7.47    77.78    0.11      0.00

COMPOSITE   27  CONC    2216    0.87             1103

                MASS    1.01   12.43             3.58

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          19900 E. COLFAX, AURORA, COLO. 90011
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                                   TEST NUMBER: EC261
                                   CAR NUMBER:  0054

                                   AFTER

              DYNAMOMETER EMISSION RESULTS USING
                 1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 MERC  MONTR  8  400  2   9957 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE              HC       CO       CO2      NOX        MPG

1975 COMPOSITE              3.47     46.83    634.0    4.27       12.39

SIMULATED 1972 COLD         3.80     57.68    652.1    4.23       11.80

SIMULATED 1972 HOT          3.23     38.65    620.3    4.31       12.88

COLD TRANSIENT  GRAMS      15.68    265.02   2210.3   16.66       12.15

COLD STABILIZED GRAMS      12.83    167.59   2680.4   13.05       11.49

HOT  TRANSIENT  GRAMS      11.37    122.26   1571.7   15.24       14.78

HOT  STABILIZED GRAMS      11.54    162.25   2573.2   14.89       11.57
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                   ANALYSIS OF KEY-MODE EMISSIONS
             SPEED          HC       CO       CO2      NOX        MPG

HIGH CRUISE 49  CONC       1919     0.52     14.53     2904

                MASS       2.43    13.73    565.85    11.21       14.88

LOW  CRUISE 33  CONC       2002     0.61     14.08     1760

                MASS       2.61    13.30    434.54     5.43       15.21

IDLE         0  CONC       2054     0.92     14.14      184

                MASS       0.59     6.45    111.40     0.15        0.00

COMPOSITE   27  CONC       1949     0.58               1109

                MASS       1.26     5.03               3.57

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              15900 E. COLFAX, AURORA, COLO. 80011
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                                             TEST NUMBER: EC258
                                             CAR NUMBER:  CC55

                                             BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1971 PONT  SAFAR  8  400  4  10868 5000 13.4  Y   Y  EM   Y    A

GRAMS PER MILE              HC        CO       CO2       NOX         MPG

1975 COMPOSITE              4.14     35.43     701.2     6.60       11.57

SIMULATED 1972 COLD         4.46     42.86     720.8     6.65       11.10

SIMULATED 1972 HOT          3.91     29.83     686.5     6.55       11.94

COLD TRANSIENT  GRAMS  17.41    157.83   2506.9    29.65       11.32

COLD STABILIZED GRAMS  16.02    123.59   2855.3    20.25       10.90

HOT  TRANSIENT  GRAMS  13.28    100.15   2249.3    28.90       13.28

HOT  STABILIZED GRAMS  16.59    117.20   2520.1    20.10       10.86

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                    ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC         CO       CO2       NOX         MPG

HIGH CRUISE 49  CONC     2663       0.32     14.65      3794

                MASS     3.52      10.75    623.77     16.18       13.66

LOW  CRUISE 33  CONC     3341       0.76     14.14      1937

                MASS     3.28      19.15    495.25      7.03       16.62

IDLE         0  CONC     3508       3.10     12.67       103

                MASS     0.84      13.01    107.60      0.11        0.00

COMPOSITE   27  CONC     2888       0.86                1289

                MASS     1.78      13.12                4.55

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                                                  TEST NUMBER: EC267
                                                  CAR NUMBER:  CC55

                                                  AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMPR INRT ROHP A/C EVP EXH PCV TRANS
1971 PONT  SAFAR  8  400  4  10887 5000 13.4  Y   Y  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           3.85    35.62    705.3    5.51      11.51

SIMULATED 1972 COLD      4.35    47.14    718.8    4.78      11.04

SIMULATED 1972 HOT       3.47    26.93    655.0    6.05      11.90

COLD TRANSIENT  GRAMS   18.20   240.54   2440.2   18.42      11.30

COLD STABILIZED GRAMS   14.41   112.64   2551.0   17.41      10.80

HOT  TRANSIENT  GRAMS   11.62    89.34   2261.7   28.00      13.33

HOT  STABILIZED GRAMS   14.63   113.05   2503.9   17.35      10.96

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                      ANALYSIS OF KEY-MODE EMISSIONS

              SPEED        HC        CO      CO2      NOX       MPG

HIGH CRUISE 49   CONC     2141      0.22    13.91    3446

                 MASS     2.96      6.86   607.74   14.59      14.18

LOW  CRUISE 33   CONC     2576      0.36    13.85    1837

                 MASS     2.81     10.03   478.57    6.41      17.68

IDLE         0   CONC     2558      1.54    12.83      97

                 MASS     0.80     11.59   114.82    0.11       0.00

COMPOSITE   27   CONC     2336      0.54             1194

                 MASS     1.56     10.23             4.48

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                                                    TEST NUMBER: EC259
                                                    CAR NUMBER:  CC56

                                                    BEFORE

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1968 BUIC  SPECI  8  350  2  23493 3500 11.2  N   N  EM   Y    A

GRAMS PER MILE               HC       CO      CO2      NOX       MPG

1975 COMPOSITE              3.82    78.82    485.7     2.20     14.33

SIMULATED 1972 COLD         4.41    93.92    497.8     1.58     13.51

SIMULATED 1972 HOT          3.36    67.44    476.6     2.36     15.01

COLD TRANSIENT  GRAMS      18.62   373.31   1666.6     7.82     13.94

COLD STABILIZED GRAMS      14.49   331.07   2046.4     7.05     13.12

HOT  TRANSIENT  GRAMS      10.73   174.73   1527.9    10.67     17.70

HOT  STABILIZED GRAMS      13.64   306.79   1593.6     6.88     13.61
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                        ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC       CO      CO2      NOX       MPG

HIGH CRUISE 45  CONC       2054     0.71    14.14     2169

                MASS       2.19    17.04   486.00     7.40     17.14

LOW  CRUISE 30  CONC       2629     1.52    13.42      585

                MASS       2.36    28.42   375.54     1.78     20.82

IDLE         0  CONC       4273     5.66     9.12       61

                MASS       0.65    19.97    55.16     0.04      0.00

COMPOSITE   25  CONC       2519     1.67               594

                MASS       1.22    20.16              2.01

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                   19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC266
                                        CAR NUMBER:  0056

                                        AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 BUIC  SPECI  8  350  2  23510 3500 11.2  N   N   EM  Y    A

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             2.90     44.03     530.7      2.45      14.62

SIMULATED 1972 COLD        3.50     65.35     540.9      2.18      13.60

SIMULATED 1972 HOT         2.44     27.94     523.0      2.66      15.50

COLD TRANSIENT  GRAMS     16.54    369.06    1762.8      6.25      13.57

COLD STABILIZED GRAMS      9.75    121.07    2253.6      6.10      13.63

HOT  TRANSIENT  GRAMS      6.56     88.50    1628.6     11.66      16.11

HOT  STABILIZED GRAMS      8.67    103.72    2215.6      6.52      14.25

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                         ANALYSIS OF KEY-MODE EMISSIONS

            SPEED           HC        CO       CO2       NOX        MPG

HIGH CRUISE 45  CONC      1984      0.76     14.14      2169

                MASS      2.14     18.83    462.96      7.37      17.84

LOW  CRUISE 30  CONC      1870      0.53     13.33       566

                MASS      1.63     11.21    365.50      2.12      22.94

IDLE         0  CONC      1532      0.51     12.19       120

                MASS      0.38      2.26     83.44      0.09       0.00

COMPOSITE   25  CONC      1890      0.65                 614

                MASS      0.96      7.41                2.10

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                  19900 E. COLFAX, AURORA, COLO. 80011
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TEST NUMBER: 80260
CAR NUMBER: 0057

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	IMPAL	8	350	4	35953	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.07	90.05	450.3	2.56	14.65
SIMULATED 1972 COLD	5.54	102.50	455.0	2.58	14.03
SIMULATED 1972 HOT	4.41	80.65	446.7	3.25	15.16
COLD TRANSIENT GRAMS	24.58	384.05	1521.9	9.58	14.75
COLD STABILIZED GRAMS	19.59	384.66	1850.8	5.77	13.41
HOT TRANSIENT GRAMS	13.46	220.23	1455.8	14.58	17.59
HOT STABILIZED GRAMS	18.35	342.25	1661.9	10.84	13.55

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2854	1.17	14.35	2788	
		MASS	2.87	26.49	456.38	8.99	17.56
LOW CRUISE	33	CONC	3341	1.04	14.14	1744	
		MASS	2.60	23.81	341.01	3.99	23.03
IDLE	0	CONC	5559	7.13	9.92	82	
		MASS	0.90	27.09	56.89	0.05	0.00
COMPOSITE	27	CONC	3398	2.18		1039	
		MASS	1.58	26.58		2.76	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC265
CAR NUMBER: 0057

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	IMPAL	8	350	4	35975	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.72	40.17	516.2	2.62	15.07
SIMULATED 1972 COLD	4.53	59.30	517.2	2.22	14.25
SIMULATED 1972 HOT	3.10	25.73	515.5	2.93	15.74
COLD TRANSIENT GRAMS	21.17	332.75	1678.7	7.64	14.33
COLD STABILIZED GRAMS	12.84	112.02	2200.2	9.02	14.19
HOT TRANSIENT GRAMS	10.40	80.55	1665.7	12.55	17.80
HOT STABILIZED GRAMS	11.02	72.26	2210.4	9.69	14.54

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ANALYSIS OF KEY-MODE EMISSIONS

SPEED			HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2548	0.56	14.59	2556	
		MASS	2.67	12.36	458.53	8.02	18.31
LOW CRUISE	33	CONC	3167	0.90	14.14	1453	
		MASS	2.66	18.35	355.92	3.56	22.42
IDLE	0	CONC	1727	0.11	14.26	195	
		MASS	0.48	0.64	96.91	0.16	0.00
COMPOSITE	27	CONC	2464	0.49		964	
		MASS	1.26	5.53		2.53	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

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                                         TEST NUMBER: EC263
                                         CAR NUMBER:  0058

                                         BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HORP A/C EVP EXH PCV TRANS
1969 OLDS  DELTA  8  455  2  11323 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE           HC        CO      CO2      NOX       MPG

1975 COMPOSITE          5.53    125.89    557.1     2.46     11.53

SIMULATED 1972 COLD     6.33    129.12    575.6     2.42     11.15

SIMULATED 1972 HOT      4.92    123.44    543.2     2.48     11.83

COLD TRANSIENT  GRAMS  26.31    406.44   2008.7    10.70     11.90

COLD STABILIZED GRAMS  21.17    561.96   2308.1     7.48     10.52

HOT  TRANSIENT  GRAMS  15.73    363.87   1765.6    11.13     13.62

HOT  STABILIZED GRAMS  20.41    552.55   2225.9     7.22     10.85
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                   ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC    2802      2.67    13.19     1659

                MASS    3.36     72.87   530.46     7.55     13.58

LOW  CRUISE 33  CONC    3202      2.87    12.92      884

                MASS    3.10     62.16   425.34     2.75     16.71

IDLE         0  CONC    4343      6.07     9.92       72

                MASS    0.97     32.95    84.11     0.07      0.00

COMPOSITE   27  CONC    3125      3.18               586

                MASS    1.80     46.18              2.32

              AUTOMOTIVE TESTING LABORATORIES, INC.
              19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: F0276
                                         CAR NUMBER:  0058

                                         AFTER

                       DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 OLDS  DELTA  8  455  2  11347 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE          HC       CO      CO2      NOX       MPG

1975 COMPOSITE         4.42   104.98   559.9     2.93      12.05

SIMULATED 1972 COLD    5.08   112.53   589.3     2.90      11.38

SIMULATED 1972 HOT     3.92    99.29   537.7     2.95      12.61

COLD TRANSIENT  GRAMS 21.13   400.12  1983.3    12.46      12.13

COLD STABILIZED GRAMS 16.99   443.88  2436.7     9.32      10.76

HOT  TRANSIENT  GRAMS 12.39   300.76  1596.1    12.80      15.42

HOT  STABILIZED GRAMS 16.54   412.84  2444.9     9.72      10.90
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                      ANALYSIS OF KEY-MODE EMISSIONS

            SPEED        HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC    2732      2.66    13.28    1821

                MASS    3.26     61.20   520.87    7.06      14.20

LOW  CRUISE 33  CONC    3167      2.82    12.81     990

                MASS    2.83     62.45   403.90    2.92      17.43

IDLE         0  CONC    2437      2.67    12.45     117

                MASS    0.58     16.99   118.98    0.12       0.00

COMPOSITE   27  CONC    2725      2.55              665

                MASS    1.50     33.09             2.17

                AUTOMOTIVE TESTING LABORATORIES, INC.
                15500 E. COLFAX, AURORA, COLO. 80011
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                                                TEST NUMBER: EC264
                                                CAR NUMBER:  0059

                                                BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
 1968 PONT  TEMPE  8  350  2  77968 4000 12.0  Y   N  EM   Y    A

 GRAMS PER MILE           HC       CO       CO2      NOX       MPG

 1975 COMPOSITE          6.74     86.48    520.7     1.69     13.14

 SIMULATED 1972 COLD     9.28     84.44    533.9     1.65     12.79

 SIMULATED 1972 HOT      4.81     88.03    510.8     1.72     13.40

 COLD TRANSIENT  GRAMS  51.06    310.40   1761.9     6.02     13.48

 COLD STABILIZED GRAMS  18.58    322.87   2242.6     6.35     12.21

 HOT  TRANSIENT  GRAMS  17.54    337.34   1588.4     6.58     14.95

 HOT  STABILIZED GRAMS  16.80    247.74   2164.6     6.68     13.15
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                        ANALYSIS OF KEY-MODE EMISSIONS
          SPEED           HC       CO       CO2      NOX       MPG

 HIGH CRUISE 49  CONC    3508      2.78    12.52     1316

                 MASS    4.17     74.23   483.65     4.76     14.52

 LOW  CRUISE 33  CONC    3063      0.90    13.33     1125

                 MASS    2.71     20.91   355.51     3.00     20.38

 IDLE         0  CONC    2952      0.48    11.66      121

                 MASS    0.79      1.61    76.90     0.08      0.00

 COMPOSITE   27  CONC    3360      2.02               609

                 MASS    1.87     21.96              1.64

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: E0275
                                              CAR NUMBER:  0059

                                              AFTER

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
 1968 PONT  TEMPE  8  350  2  77980 4000 12.0  Y   N  EM   Y    A

 GRAMS PER MILE              HC        CO      CO2      NOX      MPG

 1975 COMPOSITE             5.34     86.66    560.5     1.55     12.48

 SIMULATED 1972 COLD        6.64     90.82    573.6     1.82     12.08

 SIMULATED 1972 HOT         4.36     83.53    550.6     2.04     12.90

 COLD TRANSIENT  GRAMS     32.37    373.27   1646.1     6.46     12.82

 COLD STABILIZED GRAMS     17.40    307.64   2456.1     7.20     11.45

 HOT  TRANSIENT  GRAMS     15.33    318.65   1673.4     8.12     14.63

 HOT  STABILIZED GRAMS     15.88    255.06   2416.0     7.41     11.56
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                      ANALYSIS OF KEY-MODE EMISSIONS
          SPEED              HC        CO      CO2      NOX       MPG

 HIGH CRUISE 49  CONC       3439      2.58    12.81     1280

                 MASS       4.26     84.86   455.43     1.70     14.79

 LOW  CRUISE 33  CONC       2680      0.88    13.42     1087

                 MASS       2.55     20.68   354.36     3.09     20.48

 IDLE         0  CONC       2297      0.61    13.33      214

                 MASS       0.70      4.16   108.56     0.17      0.00

 COMPOSITE   27  CONC       3151      2.17               633

                 MASS       1.82     26.23              1.00

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                19900 E. COLFAX, AURORA, COLO. 80011
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                                                  TEST NUMBER: E0272
                                                  CAR NUMBER:  0060

                                                  BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 DODG  DART   6  225  1  21739 3000 10.3  N   N  EM   Y    A

GRAMS PER MILE              HC        CO       CO2       NOX         MPG

1975 COMPOSITE              4.08     52.24    405.7      4.55       17.79

SIMULATED 1972 COLD         5.53     70.16    407.9      4.02       16.63

SIMULATED 1972 HOT          2.99     38.71    404.0      4.95       16.77

COLD TRANSIENT  GRAMS    29.41    404.68  1335.0    10.28         15.75

COLD STABILIZED GRAMS    12.07    121.53  1724.2    19.87         17.55

HOT  TRANSIENT  GRAMS    10.37    168.82  1306.2    17.25         20.26

HOT  STABILIZED GRAMS    11.28     90.95  1599.1    19.61         19.29
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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED            HC        CO       CO2       NOX         MPG

HIGH CRUISE 45  CONC       2819      2.43     13.56      2401

                MASS       2.75     57.66   420.26      7.78        17.14

LOW  CRUISE 30  CONC       3063      0.90     14.23      2788

                MASS       2.13     17.49   328.37      6.33        24.56

IDLE         0  CONC       3126      0.98     13.56       232

                MASS       0.52      3.24    50.49      0.14         0.00

COMPOSITE   25  CONC       2901      1.67                1320

                MASS       1.26     18.47                2.92

              AUTOMOTIVE TESTING LABORATORIES, INC.
              15900 E. COLFAX, AURORA, COLO. 80011
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                                           TEST NUMBER: EC284
                                           CAR NUMBER:  0060

                                           AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 DODG  DART   6  225  1  21757 3000 10.3  N   N  EM   Y    A

GRAMS PER MILE              HC        CO      CO2      NOX        MPG

1975 COMPOSITE              2.73     37.34    401.0    4.40      15.02

SIMULATED 1972 COLD         2.97     42.34    416.6    4.43      18.08

SIMULATED 1972 HOT          2.54     33.57    385.2    4.37      15.79

COLD TRANSIENT  GRAMS     13.07    263.08   1462.5    14.34      16.96

COLD STABILIZED GRAMS      9.24     54.48   1662.4    18.50      15.29

HOT  TRANSIENT  GRAMS      5.84    197.30   1256.8    13.87      20.34

HOT  STABILIZED GRAMS      9.26     63.24   1646.8    17.27      15.31

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                        ANALYSIS OF KEY-MODE EMISSIONS

             SPEED         HC        CO       CO2      NOX        MPG

HIGH CRUISE 45  CONC      2732      2.62     13.35     2440

                MASS      2.67     53.73    407.28     7.29      17.81

LOW  CRUISE 30  CONC      3132      1.50     13.71     2092

                MASS      2.30     26.81    315.45     4.68      24.41

IDLE         0  CONC      1821      0.09     12.72      200

                MASS      0.31      0.63     50.17     0.10       0.00

COMPOSITE   25  CONC      2609      1.51               1121

                MASS      1.12     16.84               2.51

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                  15900 E. COLFAX, AURORA, COLO. 80011
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                                           TEST NUMBER: 80273
                                           CAR NUMBER:  0061

                                           BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 BUIC  ELECT  8  455  4  38759 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE              HC        CO      CO2      NOX        MPG

1975 COMPOSITE             5.51     82.45    565.7     2.33      12.43

SIMULATED 1972 COLD        6.21     97.28    574.8     2.09      11.92

SIMULATED 1972 HOT         4.58     71.26    565.5     2.50      12.84

COLD TRANSIENT  GRAMS  27.64    372.28   1840.5     8.39      12.54

COLD STABILIZED GRAMS  18.95    357.33   2470.2     7.32      11.09

HOT  TRANSIENT  GRAMS  18.42    177.08   1774.0    11.44      15.40

HOT  STABILIZED GRAMS  19.53    354.88   2354.5     6.96      11.38

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                    ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC      3439      1.59    13.14     1992

                MASS      4.09     61.96   486.34     7.94      14.93

LOW  CRUISE 33  CONC      4308      3.44    12.15      624

                MASS      4.21     70.77   371.12     1.82      17.97

IDLE         0  CONC      2152      0.13    12.51      111

                MASS      0.55      1.04   100.68     0.11       0.00

COMPOSITE   27  CONC      3297      1.45               592

                MASS      1.82     24.00              2.09

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                                    TEST NUMBER: 60283
                                                    CAR NUMBER:  0061

                                                    AFTER

                         DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL COMPR INRT RDHP A/C EVP EXH PCV TRANS
1970 BUIC  ELECT  8  455  4  38763 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE            HC        CO       CO2      NOX       MPG

1975 COMPOSITE           5.18     86.65     604.5     2.73     11.76

SIMULATED 1972 COLD      5.68     97.69     620.2     2.63     11.25

SIMULATED 1972 HOT       4.60     78.67     552.5     2.80     12.18

COLD TRANSIENT  GRAMS   22.29    400.49    2021.9    11.74     11.94

COLD STABILIZED GRAMS   20.31    332.16    2625.9     8.00     10.66

HOT  TRANSIENT  GRAMS   15.66    257.89    1814.1    12.57     14.33

HOT  STABILIZED GRAMS   20.16    333.29    2547.7     7.97     10.94

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                       ANALYSIS OF KEY-MODE EMISSIONS

              SPEED          HC        CO       CO2      NOX       MPG

HIGH CRUISE 49  CONC       3126      1.64     13.76     2634

                MASS       3.76     52.97    508.40     8.58     14.76

LOW  CRUISE 33  CONC       4169      2.87     12.97      855

                MASS       3.55     58.34    384.26     2.75     18.23

IDLE         0  CONC       2402      0.66     13.11      157

                MASS       0.71      3.49    113.05     0.16      0.00

COMPOSITE   27  CONC       3109      1.52                797

                MASS       1.82     21.94               2.52

                  AUTOMOTIVE TESTING LABORATORIES, INC.
                  19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: EC274
                                              CAR NUMBER:  0062

                                              BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1971 CHEV  IMPAL  8  400  2  13300 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX       MPG

1975 COMPOSITE            4.54    43.96    681.1     3.39     11.65

SIMULATED 1972 COLD       4.12    64.13    702.5     3.08     10.91

SIMULATED 1972 HOT        4.86    28.74    665.1     3.62     12.27

COLD TRANSIENT  GRAMS    20.20   386.95   2274.5    10.78     11.03

COLD STABILIZED GRAMS    10.69    94.01   2993.9    12.29     10.80

HOT  TRANSIENT  GRAMS    25.78   121.52   1994.0    14.87     14.34

HOT  STABILIZED GRAMS    35.99    73.93   2701.5    11.16     11.70

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                     ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC        CO      CO2      NOX        MPG

HIGH CRUISE 49   CONC     1990      2.09    13.56     1125

                 MASS     2.49     68.66   614.71     5.33      12.19

LOW  CRUISE 33   CONC     1202      0.74    13.57      824

                 MASS     1.19     24.38   573.49     2.52      14.47

IDLE         0   CONC     1463      0.12    12.19      807

                 MASS     0.35      1.77   123.06     0.32       0.00

COMPOSITE   27   CONC     1782      1.48               725

                 MASS     1.00     21.04              1.83

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                   TEST NUMBER: EC282
                                                   CAR NUMBER:  0062

                                                   AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

  YEAR MAKE  MODEL CYL CID BBL COOMR INRT RCHP A/C EVP EXH PCV TRANS
  1971 CHEV  IMPAL  8  400  2  13318 4500 12.7  Y   Y  EM   Y    A

  GRAMS PER MILE            HC       CO      CO2      NOX       MPG

  1975 COMPOSITE           2.99     44.56   678.5     3.29     11.74

  SIMULATED 1972 COLD      3.20     50.49   680.0     2.97     11.58

  SIMULATED 1972 HOT       2.83     40.12   678.1     3.54     11.87

  COLD TRANSIENT  GRAMS   13.83    266.57  2101.1     9.80     12.68

  COLD STABILIZED GRAMS   10.19    111.79  2998.7    12.46     10.69

  HOT  TRANSIENT  GRAMS   11.07    189.12  2087.3    14.11     13.44

  HOT  STABILIZED GRAMS    9.20     83.49  2725.0    11.18     11.88
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                      ANALYSIS OF KEY-MODE EMISSIONS

            SPEED           HC       CO      CO2      NOX       MPG

  HIGH CRUISE 49  CONC     2224      1.77    14.14    1899

                  MASS     3.00     59.51   612.02    7.41     12.44

  LOW  CRUISE 33  CONC     1602      0.25    13.91    1969

                  MASS     1.99      5.44   517.68    5.28     16.72

  IDLE         0  CONC     2141      0.41    13.91     315

                  MASS     0.67      1.44    97.59    0.24      0.00

  COMPOSITE   27  CONC     2143      1.27              926

                  MASS     1.42     16.56             2.73

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                    19900 E. COLFAX, AURORA, COLO. 80011
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                                                        TEST NUMBER: FC299
                                                        CAR NUMBER:  0063

                                                        BEFORE

                             DYNAMOMETER EMISSION RESULTS USING
                               1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1969 CHRY  300    8  383  4  34481 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX        MPG

1975 COMPOSITE            6.66    110.39   507.6     1.44      12.68

SIMULATED 1972 COLD       8.17    108.39   518.5     1.35      12.46

SIMULATED 1972 HOT        5.52    111.83   499.5     1.50      12.86

COLD TRANSIENT  GRAMS   38.39    337.74  1746.4     4.50      13.59

COLD STABILIZED GRAMS   22.85    475.16  2142.1     5.62      11.58

HOT  TRANSIENT  GRAMS   18.57    363.57  1603.8     5.65      14.55

HOT  STABILIZED GRAMS   20.79    422.23  2133.8     5.59      11.58
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                       ANALYSIS OF KEY-MODE EMISSIONS

            SPEED           HC        CO      CO2      NOX         MPG

HIGH CRUISE 49  CONC      4204      5.31    11.41      630

                MASS      5.58    104.89   445.62     2.48       14.18

LOW  CRUISE 33  CONC      4134      3.88    12.27      875

                MASS      5.62     79.63   383.64     2.71       16.91

IDLE         0  CONC      3752      3.70    12.16       75

                MASS      1.65     17.94    87.19     0.06        0.00

COMPOSITE   27  CONC      4114      4.60               392

                MASS      3.06     46.59               1.06

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: FC301
                                              CAR NUMBER:  CC63

                                              AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HLHP A/C EVP EXH PCV TRANS
1969 CHRY  300    8  383  4  34457 4500 12.7  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX        MPG

1975 COMPOSITE           6.73    87.17    544.4     1.94      12.67

SIMULATED 1972 COLD      8.69    94.28    547.9     1.88      12.31

SIMULATED 1972 HOT       5.25    81.81    541.9     2.00      12.96

COLD TRANSIENT  GRAMS   44.65   319.54   1807.6     6.34      13.26

COLD STABILIZED GRAMS   20.53   387.55   2301.5     7.60      11.52

HOT  TRANSIENT  GRAMS   18.84   225.95   1762.4     7.41      14.93

HOT  STABILIZED GRAMS   19.54   326.47   2281.2     7.69      12.01
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                        ANALYSIS OF KEY-MODE EMISSIONS

          SPEED           HC       CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC     4134     5.01    11.92      778

                MASS     4.76   124.65   449.85     2.85      13.48

LOW  CRUISE 33  CONC     4586     4.53    12.05      701

                MASS     4.13    89.36   367.89     2.11      17.08

IDLE         0  CONC     3126     1.62    13.42       88

                MASS     0.41     9.00    53.69     0.15       0.00

COMPOSITE   27  CONC     3998     4.09               378

                MASS     1.91    46.87              1.10

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                   19900 E. COLFAX, AURORA, COLO. 80011
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                                         TEST NUMBER: EC300
                                         CAR NUMBER:  0064

                                         BEFORE

                     DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH FCV TRANS
1970 FORD  MAVER  6  250  1  25780 2750  9.5  N   N  EM   Y    A

GRAMS PER MILE             HC       CO      CO2      NOX       MPG

1975 COMPOSITE            2.56     26.07   355.5     3.67     19.96

SIMULATED 1972 COLD       3.16     33.57   408.1     3.82     18.91

SIMULATED 1972 HOT        2.81     20.41   388.7     3.56     20.82

COLD TRANSIENT  GRAMS    12.37    193.54  1440.8    16.19     18.22

COLD STABILIZED GRAMS    11.34     58.25  1620.1    12.49     19.62

HOT  TRANSIENT  GRAMS     9.75     54.81  1280.0    14.19     22.27

HOT  STABILIZED GRAMS    11.03     61.92  1577.0    11.59     20.06

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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC        CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     2917      1.59    13.73     2672

                MASS     2.45     34.79   365.78     6.96     20.80

LOW  CRUISE 23  CONC     2193      0.51    14.26      533

                MASS     1.56      6.36   291.90     1.13     29.02

IDLE         0  CONC     1829      0.08    13.19      108

                MASS     0.29      0.39    51.14     0.05      0.00

COMPOSITE   20  CONC     2642      1.09               654

                MASS     0.98      9.68              1.81

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: EC302
                                          CAR NUMBER:  0064

                                          AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1970 FORD  MAVER  6  250  1  29802 2750  9.5  N   N  EM   Y    A

GRAMS PER MILE             HC      CO     CO2     NOX      MPG

1975 COMPOSITE            3.08   27.41   382.7    4.17    20.45

SIMULATED 1972 COLD       3.22   33.61   354.9    4.32    19.45

SIMULATED 1972 HOT        2.97   22.73   373.5    4.06    21.27

COLD TRANSIENT  GRAMS    12.31  181.18  1439.0   17.78    18.44

COLD STABILIZED GRAMS    11.86   70.92  1523.1   14.60    20.51

HOT  TRANSIENT  GRAMS    10.40   99.56  1278.2   15.85    22.15

HOT  STABILIZED GRAMS    11.81   66.69  1491.1   12.99    20.99

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                    ANALYSIS OF KEY-MODE EMISSIONS

         SPEED           HC      CO     CO2     NOX      MPG

HIGH CRUISE 37  CONC    2871    1.70   13.76   1760

                MASS    2.30   30.42  395.04   7.05    21.51

LOW  CRUISE 23  CONC    2837    0.53   14.08   1163

                MASS    1.69    5.88  276.76   2.18    30.57

IDLE         0  CONC    3125    0.18   13.39    478

                MASS    0.27    0.63   56.31   0.18     0.00

COMPOSITE   20  CONC    2914    1.21            864

                MASS    0.94    8.69           2.08

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                          TEST NUMBER: EC303
                                          CAR NUMBER:  0065

                                          BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 VOLV  144S   4  121  2  17054 3000 10.3  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO       CO2      NOX        MPG

1975 COMPOSITE             4.72     57.89    350.2     3.36      19.53

SIMULATED 1972 COLD        6.56     71.34    363.7     3.61      17.53

SIMULATED 1972 HOT         3.33     47.74    340.0     3.17      20.93

COLD TRANSIENT  GRAMS     35.61    329.98   1302.6    16.67      16.81

COLD STABILIZED GRAMS     13.55    205.09   1425.5    10.44      19.15

HOT  TRANSIENT  GRAMS     11.44    152.94   1124.2    13.33      23.21

HOT  STABILIZED GRAMS     10.27    163.39   1379.5     9.00      20.54
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                      ANALYSIS OF KEY-MODE EMISSIONS

          SPEED             HC       CO       CO2      NOX        MPG

HIGH CRUISE 45  CONC      2917      2.13    13.68     2902

                MASS      2.51     41.92   376.06     6.73       19.80

LOW  CRUISE 30  CONC      2332      0.61    14.44     1608

                MASS      1.46      9.99   257.14     2.58       28.09

IDLE         0  CONC      3960      3.57    12.89      111

                MASS      0.43      8.15    42.30     0.09        0.00

COMPOSITE   25  CONC      3045      2.12               960

                MASS      1.08     16.83              2.07

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                                        TEST NUMBER: E0313
                                                        CAR NUMBER:  0065

                                                        AFTER

                          DYNAMOMETER EMISSION RESULTS USING
                            1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 VOLV  144S   4  121  2  17078 3000 10.3  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO      CO2      NOX       MPG

1975 COMPOSITE              3.51    42.02    372.4    3.47      19.81

SIMULATED 1972 COLD         4.72    47.32    390.9    4.07      18.55
SIMULATED 1972 HOT          2.59    38.03    358.4    3.02      20.89

COLD TRANSIENT  GRAMS  24.71   202.86   1398.8   19.44      18.10
COLD STABILIZED GRAMS  10.71   152.01   1532.6   11.07      18.99
HOT  TRANSIENT  GRAMS   8.74   133.20   1155.1   11.62      23.39
HOT  STABILIZED GRAMS  10.34   158.83   1473.5    9.10      19.53
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                      ANALYSIS OF KEY-MODE EMISSIONS
             SPEED          HC        CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC      2987      1.98    13.85     2842

                MASS      2.10     41.25   373.16     7.40       20.03

LOW  CRUISE 30  CONC      2454      0.58    14.44     1665

                MASS      1.19      8.51   291.80     2.98       28.83

IDLE         0  CONC      3995      3.40    13.00      129

                MASS      0.20      6.54    42.08     0.06        0.00

COMPOSITE   25  CONC      3114      1.99              1091

                MASS      0.80     15.47              2.23

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0304
                                        CAR NUMBER:  0066

                                        BEFORE

                 DYNAMOMETER EMISSION RESULTS USING
                   1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1970 PLYM  FURY   8  440  4  27056 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           4.58    75.42    501.0     2.42     14.05

SIMULATED 1972 COLD      5.43    86.80    514.9     2.38     13.32

SIMULATED 1972 HOT       3.54    66.82    450.5     2.45     14.65

COLD TRANSIENT  GRAMS   22.55   340.06   1825.5    10.65     13.34

COLD STABILIZED GRAMS   17.79   310.98   2032.5     7.24     13.30

HOT  TRANSIENT  GRAMS   11.75   190.20   1646.1    11.16     16.40

HOT  STABILIZED GRAMS   15.55   293.27   2046.8     7.48     13.40

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               ANALYSIS OF KEY-MODE EMISSIONS

         SPEED            HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC     2778     2.58    12.32     1356

                MASS     3.42    70.51   485.85     5.53     14.64

LOW  CRUISE 33  CONC     2367     0.90    11.77     1453

                MASS     2.50    26.51   402.23     4.74     15.71

IDLE         0  CONC     2784     3.42     8.49       64

                MASS     0.70    19.43    78.49     0.06      0.00

COMPOSITE   27  CONC     2736     2.42               690

                MASS     1.59    33.13              2.10

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             15900 E. COLFAX, AURORA, COLO. 80011
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                                   TEST NUMBER: EC312
                                   CAR NUMBER:  0066

                                   AFTER

                DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1970 PLYM  FURY   8  440  4  27071 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE          HC        CO       CO2      NOX        MPG

1975 COMPOSITE         4.56     61.45     524.0     4.56      14.02

SIMULATED 1972 COLD    5.28     75.29     537.9     4.29      13.24

SIMULATED 1972 HOT     4.02     51.11     513.9     4.77      14.67

COLD TRANSIENT  GRAMS  22.44    344.79   1874.1    15.70      13.07

COLD STABILIZED GRAMS  17.15    219.62   2157.2    16.49      13.41

HOT  TRANSIENT  GRAMS  12.57    163.72   1656.7    15.27      16.25

HOT  STABILIZED GRAMS  12.73    183.96   2174.7    17.27      13.70
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                ANALYSIS OF KEY-MODE EMISSIONS

          SPEED         HC        CO       CO2      NOX        MPG

HIGH CRUISE 49  CONC   3058      2.05     12.64    1576

                MASS   5.48     65.45    475.55    6.61       14.95

LOW  CRUISE 33  CONC   2645      0.70     11.65    2440

                MASS   2.77     16.45    409.41    6.53       20.06

IDLE         0  CONC   2750      2.09      8.62      62

                MASS   0.68     11.41     71.05    0.05        0.00

COMPOSITE   27  CONC   2966      1.83              1070

                MASS   2.16     25.54              2.71

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0310
                                        CAR NUMBER:  0067

                                        BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                     1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 FORD  LTD     8 351  2  21739 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE            HC        CO       CO2      NOX        MPG

1975 COMPOSITE           6.27    144.04    478.9     1.67       12.28

SIMULATED 1972 COLD      7.49    160.69    488.8     1.62       11.64

SIMULATED 1972 HOT       5.36    131.48    471.6     1.71       12.81

COLD TRANSIENT  GRAMS   34.24    631.80   1649.3     4.91       11.82

COLD STABILIZED GRAMS   21.90    573.38   2015.5     7.23       11.48

HOT  TRANSIENT  GRAMS   18.30    412.69   1521.4     5.61       14.59

HOT  STABILIZED GRAMS   20.11    555.28   1999.4     6.35       11.68
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                  ANALYSIS OF KEY-MODE EMISSIONS

           SPEED         HC        CO       CO2      NOX         MPG

HIGH CRUISE 49  CONC    4412      6.08     11.11     751

                MASS    4.77    121.58   428.72     2.81       14.03

LOW  CRUISE 33  CONC    3752      2.75     13.19    1183

                MASS    3.04     55.77   366.90     3.38       19.19

IDLE         0  CONC    5038      6.79     10.31      78

                MASS    1.12     31.44    75.20     0.08        0.00

COMPOSITE   27  CONC    4456      5.54               501

                MASS    2.27     56.74              1.25

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            19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: E0314
                                        CAR NUMBER:  0067

                                        AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1971 FORD  LTD    8  351  2  21761 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE           HC       CO       CO2      NOX       MPG

1975 COMPOSITE          5.71    130.32    543.5     1.49     11.62

SIMULATED 1972 COLD     7.55    148.49    548.2     1.40     11.06

SIMULATED 1972 HOT      4.33    116.61    535.5     1.55     12.09

COLD TRANSIENT  GRAMS  35.34    616.90   1835.6     4.91     11.10

COLD STABILIZED GRAMS  17.29    456.81   2275.7     5.60     11.02

HOT  TRANSIENT  GRAMS  15.18    377.73   1773.6     6.04     13.46

HOT  STABILIZED GRAMS  15.70    455.08   2251.7     5.60     11.22
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                   ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC       CO       CO2      NOX       MPG

HIGH CRUISE 49  CONC    4099     5.36    11.28      947

                MASS    4.36   106.95   444.95     2.06     14.21

LOW  CRUISE 23  CONC    3091     1.94    13.56      836

                MASS    2.94    39.19   393.01     2.27     15.20

IDLE         0  CONC    2778     2.94    13.05       98

                MASS    0.63    11.77    87.26     0.06      0.00

COMPOSITE   27  CONC    3752     4.28               376

                MASS    1.84    38.67              0.89

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                                          TEST NUMBER: EC315
                                          CAR NUMBER:  0068

                                          BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1970 CHEV  CAMER  8  307  2  25707 3500 11.2  Y   N  EM   Y   S-3

GRAMS PER MILE             HC        CO       CO2       NOX        MPG

1975 COMPOSITE            12.02    109.84    445.7      3.09      13.48

SIMULATED 1972 COLD       12.15    121.48    466.6      2.93      12.76

SIMULATED 1972 HOT        11.93    101.07    435.5      3.21      14.09

COLD TRANSIENT  GRAMS   37.96    447.20   1670.2    13.63      13.04

COLD STABILIZED GRAMS   53.13    463.88   1844.2     8.37      12.51

HOT  TRANSIENT  GRAMS   36.31    294.11   1422.0    15.69      16.26

HOT  STABILIZED GRAMS   54.16    468.31   1769.7     8.51      12.81
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                     ANALYSIS OF KEY-MODE EMISSIONS

          SPEED           HC        CO       CO2       NOX        MPG

HIGH CRUISE 45  CONC     3647      1.59     14.03     2904

                MASS     4.07     35.60    425.97     8.87      18.00

LOW  CRUISE 30  CONC     4690      1.81     12.43     1471

                MASS     3.99     31.01    337.19     3.47      22.34

IDLE         0  CONC    22594      8.47      6.56       42

                MASS     4.85     40.00     41.03     0.07       0.00

COMPOSITE   25  CONC     7206      2.79                967

                MASS     4.57     37.91               2.65

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                                 TEST NUMBER: EC318
                                                 CAR NUMBER:  0068

                                                 AFTER

                        DYNAMOMETER EMISSION RESULTS USING
                          1975 FEDERAL TEST PROCEDURES

  YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
  1970 CHEV  CAMAR  8  307  2  25728 3500 11.2  Y   N  EM   Y   S-3

  GRAMS PER MILE            HC        CO       CO2      NOX        MPG

  1975 COMPOSITE           11.82     86.07    425.0     3.90      14.80

  SIMULATED 1972 COLD      12.18     94.70    440.2     3.59      14.19

  SIMULATED 1972 HOT       11.56     79.56    420.6     4.14      15.30

  COLD TRANSIENT  GRAMS   39.46    353.48   1587.8    15.32      14.33

  COLD STABILIZED GRAMS   51.88    356.80   1714.1    11.55      14.06

  HOT  TRANSIENT  GRAMS   34.79    235.88   1440.4    15.44      16.86

  HOT  STABILIZED GRAMS   54.00    379.57   1673.7    11.17      14.04
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                        ANALYSIS OF KEY-MODE EMISSIONS
              SPEED          HC        CO       CO2      NOX        MPG

  HIGH CRUISE 45  CONC      3647      1.17    14.47     3268

                  MASS      4.07     28.97   458.62    10.55      17.22

  LOW  CRUISE 30  CONC      4794      1.46    14.14     1855

                  MASS      3.86     26.38   340.88     4.27      22.57

  IDLE         0  CONC     24054      8.47     6.52       38

                  MASS      4.74     34.63    26.57     0.04       0.00

  COMPOSITE   25  CONC      7483      2.47              1152

                  MASS      4.48     32.30              3.25

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                    19900 E. COLFAX, AURORA, COLO. 80011
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TEST NUMBER: EC316
CAR NUMBER: 0069

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	VOLK	CAMPM	4	97	1	48310	3000	10.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.57	84.93	323.4	3.02	16.72
SIMULATED 1972 COLD	8.21	91.70	327.5	3.02	17.90
SIMULATED 1972 HOT	4.29	79.82	320.4	3.01	15.39
COLD TRANSIENT GRAMS	41.51	369.79	1106.8	10.99	17.87
COLD STABILIZED GRAMS	20.08	317.99	1345.7	11.68	17.92
HOT TRANSIENT GRAMS	12.06	280.64	1053.0	10.92	21.22
HOT STABILIZED GRAMS	17.39	290.14	1405.5	12.16	17.89

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2315	1.11	14.14	3446	
		MASS	1.26	17.23	230.16	5.72	34.09
LOW CRUISE	30	CONC	2889	2.43	13.28	1106	
		MASS	1.16	21.60	183.59	1.51	40.25
IDLE	0	CONC	4099	4.29	10.82	74	
		MASS	0.49	10.45	35.69	0.09	0.00
COMPOSITE	25	CONC	2709	1.77		582	
		MASS	0.76	13.38		1.59	

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                                                  TEST NUMBER: 00317
                                                  CAR NUMBER:  0069

                                                  AFTER

                     DYNAMOMETER EMISSION RESULTS USING
                         1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT ROHP A/C EVP EXH PCV TRANS
1969 VOLK  CAMPM  4   97  1  48332 3000 10.3  N   N   EM  Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX        MPG

1975 COMPOSITE           4.03    68.27    303.3    2.72       21.04

SIMULATED 1972 COLD      4.33    69.15    308.5    3.17       20.65
SIMULATED 1972 HOT       3.80    67.61    299.1    2.39       21.33

COLD TRANSIENT  GRAMS   15.79   252.81   1097.4   13.15       21.09
COLD STABILIZED GRAMS   16.68   265.79   1219.1   10.60       20.29
HOT  TRANSIENT  GRAMS   11.85   241.28   1024.4    7.31       22.56
HOT  STABILIZED GRAMS   16.87   258.55   1288.1   10.30       19.64
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                     ANALYSIS OF KEY-MODE EMISSIONS

          SPEED            HC       CO      CO2      NOX        MPG

HIGH CRUISE 45  CONC      2360     1.07    14.03     3600

                MASS      1.29    15.58   215.20     5.43       36.53

LOW  CRUISE 30  CONC      2524     2.01    11.54     1048

                MASS      1.44    20.55   165.63     1.41       43.55

IDLE         0  CONC      2124     2.26    12.03       49

                MASS      0.46     7.92    32.09     0.04        0.00

COMPOSITE   25  CONC      2334     1.34               564

                MASS      0.77    11.23              1.50

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                                                       TEST NUMBER: 80319
                                                       CAR NUMBER:  0070

                                                       BEFORE

                      DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCMP A/C EVP EXH PCV TRANS
1971 DODG  COLT   4   97  2  17247 2250  8.8  N   Y  EM   Y   S-4

GRAMS PER MILE               HC       CO      CO2      NOX       MPG

1975 COMPOSITE              3.69    42.74    291.0     1.82     24.08

SIMULATED 1972 COLD         4.49    46.08    313.1     1.65     22.28

SIMULATED 1972 HOT          3.09    40.22    274.4     1.94     25.64

COLD TRANSIENT  GRAMS  20.26   161.35  1238.6     6.50     20.85

COLD STABILIZED GRAMS  13.42   184.21  1109.8     5.89     23.78

HOT  TRANSIENT  GRAMS   9.78   117.44   947.9     8.65     27.94

HOT  STABILIZED GRAMS  13.07   201.79  1158.3     5.92     22.61
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                     ANALYSIS OF KEY-MODE EMISSIONS

           SPEED           HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     1845     2.35    14.68     2479

                MASS     1.26    11.66   325.36     4.64      25.30

LOW  CRUISE 23  CONC     2593     2.61    14.00      327

                MASS     1.51    28.66   233.11     0.59      31.44

IDLE         0  CONC    11330     7.35    10.50       60

                MASS     0.68     5.75    20.36     0.03       0.00

COMPOSITE   20  CONC     3651     3.18               580

                MASS     0.91    12.38              1.17

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               19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: E0328
                                              CAR NUMBER:  0070

                                              AFTER

                    DYNAMOMETER EMISSION RESULTS USING
                       1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCMP A/C EVP EXH FCV TRANS
1971 DODG  COLT   4   97  2  17259 2250  8.8  N   Y  EM   Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           3.03     47.54   288.1    1.71      23.91

SIMULATED 1972 COLD      3.49     58.10   293.6    1.60      22.49

SIMULATED 1972 HOT       2.65     35.57   283.9    1.78      25.11

COLD TRANSIENT  GRAMS   14.82    261.71  1025.0    6.55      21.92

COLD STABILIZED GRAMS   11.36    174.07  1177.0    5.48      23.07

HOT  TRANSIENT  GRAMS    8.83    122.73   952.4    7.88      27.71

HOT  STABILIZED GRAMS    9.94    166.18  1148.4    5.57      23.79
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                    ANALYSIS OF KEY-MODE EMISSIONS
            SPEED         HC       CO      CO2      NOX       MPG

HIGH CRUISE 37  CONC     1967      3.23    15.30    2479

                MASS     1.56     14.02   327.09    5.43      25.19

LOW  CRUISE 23  CONC     2506      2.53    14.29     386

                MASS     1.42     25.94   227.13    0.51      32.69

IDLE         0  CONC     5177      5.65    11.92      53

                MASS     0.35      7.70    26.74    0.04       0.00

COMPOSITE   20  CONC     2608      3.44              593

                MASS     0.77     11.29             1.35

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                           TEST NUMBER: E0320
                                           CAR NUMBER:  0071

                                           BEFORE

                     DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

 YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
 1968 CHEV  IMPAL  8  307  2  63356 4000 12.0  Y   N   EM   Y    A

 GRAMS PER MILE              HC        CO       CO2      NOX       MPG

 1975 COMPOSITE             15.56    194.24    434.8     1.30     11.28

 SIMULATED 1972 COLD        21.02    265.44    428.4     0.73      9.70

 SIMULATED 1972 HOT         11.45    137.51    435.6     1.72     12.87

 COLD TRANSIENT  GRAMS 100.08   1396.80   1480.2     2.42      8.14

 COLD STABILIZED GRAMS  57.54    624.02   1732.5     3.07     11.84

 HOT  TRANSIENT  GRAMS  28.34    407.25   1564.8     5.83     14.17

 HOT  STABILIZED GRAMS  30.02    435.85   1567.5    11.74     12.45
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                     ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO       CO2      NOX       MPG

 HIGH CRUISE 49  CONC      4934      5.26     12.15    1309

                 MASS      6.15    104.50    472.68     5.26     13.57

 LOW  CRUISE 33  CONC      5490      4.57     12.51    1010

                 MASS      5.09     84.15    372.51     2.56     17.10

 IDLE         0  CONC      7680      5.50     11.54     151

                 MASS      1.23     19.37     56.22     0.08      0.00

 COMPOSITE   27  CONC      5452      4.97               585

                 MASS      2.90     47.66               1.75

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                                                  TEST NUMBER: EC327
                                                  CAR NUMBER:  G071

                                                  AFTER

                              DYNAMOMETER EMISSION RESULTS USING
                                1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1968 CHEV  IMPAL  8  307  2  63417 4000 12.0  Y   N  EM   Y    A

GRAMS PER MILE              HC       CO       CO2       NOX        MPG

1975 COMPOSITE            12.40    197.00    455.6      1.54       11.02

SIMULATED 1972 COLD       16.68    252.64    457.6      1.09        9.81

SIMULATED 1972 HOT         9.18    155.02    461.1      1.88       12.14

COLD TRANSIENT  GRAMS     80.93   1206.09   1535.5      3.04        8.81

COLD STABILIZED GRAMS     44.15    666.71   1951.5      5.14       11.01

HOT  TRANSIENT  GRAMS     24.69    473.94   1566.3      6.93       13.61

HOT  STABILIZED GRAMS     26.18    405.86   2019.5     10.68       12.51

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                          ANALYSIS OF KEY-MODE EMISSIONS

               SPEED          HC         CO      CO2       NOX        MPG

HIGH CRUISE 49  CONC        4794       5.41    12.19      1212

                MASS        6.03     106.28   461.92      4.80      13.74

LOW  CRUISE 33  CONC        4934       4.57    12.51       942

                MASS        5.01      83.88   371.94      2.93      17.14

IDLE         0  CONC        6081       3.02    13.31       438

                MASS        1.22      13.11    75.18      0.24       0.00

COMPOSITE   27  CONC        5043       4.61                678

                MASS        2.65      44.28               1.74

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                                        TEST NUMBER: 80321
                                        CAR NUMBER:  0072

                                        BEFORE

                  DYNAMOMETER EMISSION RESULTS USING
                     1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 CHEV  CHEVE  8  396  4  40423 3500 11.2  Y   N   AI   Y    A

GRAMS PER MILE        .    HC        CO      CO2      NOX       MPG

1975 COMPOSITE           30.14     81.72    491.7     3.69     12.44

SIMULATED 1972 COLD      34.52     97.64    515.3     3.70     11.45

SIMULATED 1972 HOT       26.84     69.71    473.5     3.68     13.32

COLD TRANSIENT  GRAMS 147.48    356.12   1906.3    17.51     10.85

COLD STABILIZED GRAMS 111.40    336.15   1958.1    10.25     12.07

HOT  TRANSIENT  GRAMS  65.52    186.65   1555.5    17.36     14.95

HOT  STABILIZED GRAMS 109.27    339.02   1668.1     8.58     12.48

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                  ANALYSIS OF KEY-MODE EMISSIONS

             SPEED          HC        CO       CO2      NOX       MPG

HIGH CRUISE 45  CONC      13208      0.64     10.65     2750

                MASS.     23.54     21.76    507.27    12.55     14.45

LOW  CRUISE 30  CONC      13903      1.07      9.65     1097

                MASS      19.91     35.85    401.00     4.21     16.51

IDLE         0  CONC      17588      4.56      6.78       48

                MASS       4.82     24.75     53.84     0.05      0.00

COMPOSITE   25  CONC      14079      1.44                838

                MASS      11.20     25.68               3.61

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                                        TEST NUMBER: E0326
                                        CAR NUMBER:  0072

                                        AFTER


                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RCHP A/C EVP EXH PCV TRANS
1969 CHEV  CHEVE  8  396  4  40445 3500 11.2  Y   N  AI   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           4.28    69.94    562.5     2.57     12.98

SIMULATED 1972 COLD      5.75    89.71    583.3     2.47     11.99

SIMULATED 1972 HOT       3.17    55.02    546.6     2.64     13.84

COLD TRANSIENT  GRAMS   29.48   400.59   2081.1    11.77     11.59

COLD STABILIZED GRAMS   13.64   271.91   2253.8     6.79     12.40

HOT  TRANSIENT  GRAMS   10.18   140.77   1807.3    12.99     15.77

HOT  STABILIZED GRAMS   13.40   260.24   2164.1     6.38     13.11

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                    ANALYSIS OF KEY-MODE EMISSIONS

           SPEED          HC       CO      CO2      NOX       MPG


HIGH CRUISE 45  CONC     1590     0.86    12.78     1845

                MASS     1.25    27.73   535.10     7.96     15.29


LOW  CRUISE 30  CONC     1132     1.39    11.74      583

                MASS     1.34    35.68   422.45     1.99     18.45


IDLE         0  CONC     3132     3.10    10.24       40

                MASS     0.53    15.69    83.66     0.07      0.00


COMPOSITE   25  CONC     1753     1.28               523

                MASS     0.80    20.91              2.20

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                 19900 E. COLFAX, AURORA, COLO. 80011
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                                              TEST NUMBER: 8C324
                                              CAR NUMBER:  0073

                                              BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                      1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 CHEV  BELAI  8  307  2  72571 4000 12.0  N   N  EM   Y    A

GRAMS PER MILE          HC       CO      CO2      NOX        MPG

1975 COMPOSITE         7.92    67.89    479.1     5.26      14.58

SIMULATED 1972 COLD    8.72    75.80    494.5     5.17      13.89

SIMULATED 1972 HOT     7.22    61.53    467.6     5.24      15.14

COLD TRANSIENT  GRAMS 34.86   340.05  1774.4    19.62      13.44

COLD STABILIZED GRAMS 30.51   228.43  1934.2    19.14      14.35

HOT  TRANSIENT  GRAMS 24.37   236.04  1572.7    20.88      16.09

HOT  STABILIZED GRAMS 27.56   208.22  1954.4    21.20      14.47
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                    ANALYSIS OF KEY-MODE EMISSIONS

          SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC    4586     1.55    14.44     2012

                MASS    5.44    46.56   504.46    11.01      14.99

LOW  CRUISE 33  CONC    4377     1.06    14.20     2649

                MASS    4.27    28.18   352.75     7.55      15.77

IDLE         0  CONC   10774     5.02    13.85       69

                MASS    0.68    10.73    34.61     0.06       0.00

COMPOSITE   27  CONC    5690     2.09              1329

                MASS    2.28    21.74              3.82

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              19900 E. COLFAX, AURORA, COLO. 80011
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                                        TEST NUMBER: EC330
                                        CAR NUMBER:  CC73

                                        AFTER

                   DYNAMOMETER EMISSION RESULTS USING
                    1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1968 CHEV  BELAI  8  307  2  72595 4000 12.0  N   N  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           6.27    59.63    504.2     4.28     14.42

SIMULATED 1972 COLD      6.84    68.85    524.8     4.32     13.60

SIMULATED 1972 HOT       5.84    52.65    488.7     4.26     15.10

COLD TRANSIENT  GRAMS   29.10   344.05   1875.4    16.78     12.94

COLD STABILIZED GRAMS   22.18   172.63   2056.4    15.61     14.30

HOT  TRANSIENT  GRAMS   21.59   222.25   1605.1    16.33     16.04

HOT  STABILIZED GRAMS   21.03   120.55   2000.2    16.26     15.20

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                  ANALYSIS OF KEY-MODE EMISSIONS

          SPEED           HC       CO      CO2      NOX       MPG

HIGH CRUISE 49  CONC     4829     2.20    14.38     2417

                MASS     5.59    52.97   453.37     8.65     14.99

LOW  CRUISE 33  CONC     4655     2.13    14.00     2153

                MASS     4.42    26.59   380.20     5.94     20.43

IDLE         0  CONC     4725     0.17    13.11      279

                MASS     1.33     4.68    97.27     0.70      0.00

COMPOSITE   27  CONC     4792     1.71              1179

                MASS     2.75    19.21              3.40

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                                              TEST NUMBER: E0325
                                              CAR NUMBER:  0074

                                              BEFORE

                        DYNAMOMETER EMISSION RESULTS USING
                           1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 VOLK  SEDAN  4   97  1  33994 2000  8.3  N   N  EM   Y   S-4

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE           4.42     73.32   299.1     2.81     20.79

SIMULATED 1972 COLD      4.79     78.57   303.5     2.91     20.14

SIMULATED 1972 HOT       4.19     65.39   299.8     2.79     21.31

COLD TRANSIENT  GRAMS  17.63    298.06  1098.0    12.39     20.59

COLD STABILIZED GRAMS  18.27    291.22  1218.0     9.42     19.78

HOT  TRANSIENT  GRAMS  12.85    228.93  1000.5    11.17     23.20

HOT  STABILIZED GRAMS  18.72    290.16  1132.1     8.16     21.01
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                        ANALYSIS OF KEY-MODE EMISSIONS
              SPEED       HC        CO      CO2      NOX        MPG

HIGH CRUISE 37  CONC     2099      1.70    14.71     3678

                MASS     1.59     28.93   346.19     8.73      22.49

LOW  CRUISE 23  CONC     2353      2.46    14.14     1473

                MASS     1.35     23.46   210.26     2.29      35.42

IDLE         0  CONC     7819      7.07    10.74       21

                MASS     0.48      9.60    23.32     0.04       0.00

COMPOSITE   20  CONC     3160      2.67              1103

                MASS     0.85     15.98              2.40

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                                                TEST NUMBER: EC325
                                                CAR NUMBER:  0074

                                                AFTER


                          DYNAMOMETER EMISSION RESULTS USING
                             1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1969 VOLK  SEDAN  4   97  1  34015 2000  8.3  N   N  EM   Y   S-4

GRAMS PER MILE              HC        CO       CO2       NOX        MPG

1975 COMPOSITE             4.29     66.76     257.7     2.02       21.40

SIMULATED 1972 COLD        4.57     71.22     303.8     2.20       20.70

SIMULATED 1972 HOT         4.08     63.40     253.1     1.87       21.55

COLD TRANSIENT  GRAMS     16.71    274.01    1054.2    10.17       20.61

COLD STABILIZED GRAMS     17.57    260.16    1164.4     6.36       20.79

HOT  TRANSIENT  GRAMS     13.06    215.32    1014.0     7.70       23.32

HOT  STABILIZED GRAMS     17.64    255.24    1153.8     5.54       21.20

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                          ANALYSIS OF KEY-MODE EMISSIONS

               SPEED        HC        CO       CO2       NOX        MPG


HIGH CRUISE 37  CONC      1950      1.81     14.55      2711

                MASS      1.44     28.32    328.25      6.12       23.60


LOW  CRUISE 23  CONC      1741      2.07     14.29      1183

                MASS      1.33     20.52    217.55      1.53       35.05


IDLE         0  CONC      3612      3.23     13.28        77

                MASS      0.37      4.51     33.57      0.04        0.00


COMPOSITE   20  CONC      2230      2.00                 887

                MASS      0.74     12.25                2.13

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                                        TEST NUMBER: EC33P
                                        CAR NUMBER:  CC75

                                        BEFORE

                    DYNAMOMETER EMISSION RESULTS USING
                        1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT HOHP A/C EVP EXH PCV TRANS
1977 BUIC  LESAB  8  350  4  10125 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE              HC        CO       CO2      NOX        MPG

1975 COMPOSITE             4.60     103.57    554.7     2.46      11.54

SIMULATED 1972 COLD        5.03     106.31    612.5     2.47      11.15

SIMULATED 1972 HOT         4.27     101.50    580.5     2.45      11.81

COLD TRANSIENT  GRAMS     19.64     356.46   2145.5    11.67      11.74

COLD STABILIZED GRAMS     18.09     440.89   2451.5     6.64      10.71

HOT  TRANSIENT  GRAMS     13.96     320.36   1505.5    11.51      13.29

HOT  STABILIZED GRAMS     18.03     416.77   2476.6     6.08      10.75
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                    ANALYSIS OF KEY-MODE EMISSIONS

            SPEED          HC        CO       CO2      NOX        MPG

HIGH CRUISE 49   CONC     2384      1.00     15.14     2169

                 MASS     2.92     33.70    551.18     8.82      14.52

LOW  CRUISE 33   CONC     3473      2.66     13.56      933

                 MASS     3.40     63.11    414.06     2.92      17.00

IDLE         0   CONC     3202      3.15     13.19      125

                 MASS     0.80     16.56     56.48     0.10       0.00

COMPOSITE   27   CONC     2649      1.53                717

                 MASS     1.60     26.24               2.57

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             15900 E. COLFAX, AURORA, COLO. 80011
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                                    TEST NUMBER: EC342
                                    CAR NUMBER:  CC75

                                    AFTER

               DYNAMOMETER EMISSION RESULTS USING
                  1975 FEDERAL TEST PROCEDURES

YEAR MAKE  MODEL CYL CID BBL ODOMR INRT RDHP A/C EVP EXH PCV TRANS
1972 BUIC  LESAB  8  350  4  10144 4500 12.7  Y   Y  EM   Y    A

GRAMS PER MILE            HC       CO      CO2      NOX       MPG

1975 COMPOSITE            4.35    83.05   625.5     2.71     11.96

SIMULATED 1972 COLD       4.68    90.96   646.6     2.80     11.07
SIMULATED 1972 HOT        4.11    77.16   610.2     2.64     11.56

COLD TRANSIENT  GRAMS  17.55    311.93  2255.4    13.50     11.55
COLD STABILIZED GRAMS  17.96    370.27  2550.4     7.49     10.62
HOT  TRANSIENT  GRAMS  13.24    208.42  1966.1    12.28     13.80
HOT  STABILIZED GRAMS  15.65    294.81  2644.4     7.29     10.66
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              ANALYSIS OF KEY-MODE EMISSIONS
         SPEED          HC       CO      CO2      NOX        MPG

HIGH CRUISE 49  CONC   2903      1.32   14.74    2015
                MASS   3.35     41.82  547.47    7.51       14.28

LOW  CRUISE 33  CONC   3766      2.45   13.76     902
                MASS   3.46     52.30  359.63    2.63       16.07

IDLE         0  CONC   2778      1.49   14.14     164
                MASS   0.71      8.25  106.66    0.14        0.00

COMPOSITE   27  CONC   2974      1.41             657
                MASS   1.67     21.52            2.24

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APPENDIX E

PREDICTED 1955 THROUGH 1972 MODEL PASSENGER CARS IN COLORADO

Predicted passenger car registration data is presented on the following pages. Predictions are based on methods described elsewhere in the study. It should be noted that data tends to be less reliable for each subsequent year.

It is possible to predict data for model years 1973, 1974 and 1975 using registration data presented in this section. However, predicted data for new model years would probably be unreliable. It can be seen from the data presented, that there is a great deal of scatter in registration data by make and model year, and a good fit would be difficult to establish.

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PASSENGER CARS IN OPERATION AS OF JULY 1, 1972 (PREDICTED)

Make	Model Year																	
	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	2099	4239	2145	3092	2343	2528	3036	3374	3633	3900	1149	1822	2002	1042	372	132	10	2
BUICK	1934	3402	4204	4394	5529	4694	4646	4555	4227	3644	3132	2011	1168	623	15	23	73	8
CADIL	907	1498	1760	1567	2063	1908	1715	1629	1559	1486	1444	1049	1080	671	353	300	22	2
CHEVR	10709	19137	16475	18535	21594	17305	20407	20576	20438	15552	4523	8538	8205	4855	3114	2149	2412	2322
CHRYS	942	1840	1459	2121	2983	2596	3017	2120	1545	1332	898	596	341	205	106	2	11	0
DODGE	3295	5575	4832	5855	5940	4211	5406	5027	4091	2732	673	1221	1085	684	5	4	9	0
FORD	14147	24480	21935	18569	15612	18742	21476	21447	14681	13532	4664	7721	5144	3428	350	1070	1016	737
IMPER	91	128	179	229	239	293	184	212	265	158	125	87	75	50	23	0	0	0
LINCO	481	720	581	765	499	564	565	425	386	295	313	260	126	30	13	16	17	1
MERCU	2540	4330	3323	4018	4117	5184	3568	3383	2792	2308	2516	1960	1152	89	151	122	160	114
OLDSM	2311	4194	4429	4882	5012	5486	5468	4918	4668	3494	3376	1755	1178	803	19	106	150	155
PLYMO	4789	8098	6279	6969	7281	6039	6676	6649	4325	3470	665	1659	1285	610	1	3	18	0
PONTI	2450	4389	4945	6801	9057	8070	7269	6963	6178	4700	3538	1397	1957	971	91	144	138	154
IMPOR	13678	32909	16994	18334	17592	13419	10423	8175	7229	6353	4752	4674	4497	3887	2371	1086	507	201

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1973 (PREDICTED)

Make	Model Year																	
	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	4239	4389	2218	3193	2417	2606	2920	3146	3433	3448	160	1215	1332	554	209	64	2	0
BUICK	3402	3530	4356	4548	5716	4676	4599	4449	4025	3316	2267	1774	872	350	0	1	8	0
CADIL	1498	1569	1840	1635	2150	1984	1702	1607	1523	1484	1364	948	993	499	213	181	1	0
CHEVR	19137	19651	16907	19009	21476	17080	19863	19567	19561	10603	537	6471	6119	3072	1852	615	1181	1212
CHRYS	1840	1878	1489	2163	3040	2591	2998	2086	1489	1233	328	486	245	124	56	0	0	0
DODGE	5575	5767	4992	6043	5936	4198	5357	4908	3867	2182	139	918	713	310	0	0	0	0
FORD	24480	25200	22561	19085	15457	18331	20569	19870	12943	11633	1001	6156	3461	2001	63	414	502	362
IMPER	128	132	184	236	246	301	180	202	244	137	99	55	44	30	8	0	0	0
LINCO	720	754	608	798	520	556	549	404	357	263	264	254	104	10	3	3	4	0
MERCU	4330	4403	3378	4083	4184	5037	3389	3108	2450	1904	1894	1644	802	12	77	50	79	56
OLDSM	4194	4353	4591	5054	6113	5447	5366	4710	4216	2059	2582	1072	522	402	0	25	45	45
PLYMO	8098	8312	6441	7144	7269	6008	6581	6428	4025	3017	89	1246	794	330	0	0	1	0
PONTI	4389	4536	5106	7015	9334	7959	7074	6630	5692	4409	2945	702	1404	562	16	33	39	51
IMPOR	32909	34791	17913	19274	18450	14043	10313	8037	7047	6124	4492	4363	4107	3459	2046	904	405	117

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1974 (PREDICTED)

Make	Model Year																	
	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	4389	4538	2291	3295	2492	2506	2722	2799	3157	2885	2	697	783	240	104	26	0	0
BUICK	3530	3658	4509	4702	5695	4629	4493	4236	3663	2798	1139	1505	602	168	0	0	0	0
CADIL	1569	1641	1920	1703	2236	1969	1678	1569	1467	1483	1256	828	895	343	110	98	0	0
CHEVR	19651	20166	17338	18904	21197	16625	18889	17942	18424	5328	7	4512	4229	1728	981	92	471	543
CHRYS	1878	1916	1518	2205	3034	2575	2950	2010	1378	1062	22	375	156	64	25	0	0	0
DODGE	5767	5958	5153	6038	5918	4160	5230	4638	3427	1066	6	635	421	179	0	0	0	0
FORD	25200	25920	23188	18895	15118	17557	19057	17518	10634	9001	45	4638	2100	1023	6	126	218	159
IMPER	132	136	190	243	253	295	172	186	212	109	70	26	20	15	2	0	0	0
LINCO	754	788	634	831	512	540	523	374	317	221	208	248	84	2	0	0	1	0
MERCU	4403	4476	3433	4149	4064	4783	3114	2727	2022	1451	1145	1323	508	0	35	17	35	25
OLDSM	4353	4513	4753	5227	6070	5345	5138	4304	3589	437	1601	493	142	160	0	6	10	10
PLYM	8312	8525	6602	7133	7231	5923	6363	5984	3500	2336	1	866	424	156	0	0	0	0
PONTI	4536	4683	5266	7229	9206	7745	6735	6109	5001	4076	2301	231	902	279	1	4	7	13
IMPOR	34791	36673	18832	20215	19309	13895	10139	7834	6792	5818	4217	3985	3655	2985	1703	721	308	56

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1975 (PREDICTED)

Make	Model Year																	
	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	4538	4687	2364	3397	2397	2337	2422	2327	2800	2249	0	332	397	82	46	9	0	0
BUICK	3658	3787	4662	4684	5637	4522	4278	3855	3090	2092	288	1218	377	67	0	0	0	0
CADIL	1641	1712	2000	1771	2218	1941	1639	1512	1386	1482	1117	695	789	213	47	46	0	0
CHEVR	20166	20681	17243	18659	2063.	15810	17321	15586	17019	1649	0	2848	2677	848	455	6	147	204
CHRYS	1916	1954	1548	2201	3015	2534	2843	1861	1186	807	0	271	87	27	9	0	0	0
DODGE	5958	6149	5149	6021	5865	4062	4943	4111	2699	136	0	399	219	92	0	0	0	0
FORD	25920	26639	22957	18480	14479	16265	16801	14392	7930	5945	0	3277	1130	448	0	29	81	61
IMPER	136	140	195	249	247	281	158	162	168	77	41	8	7	7	0	0	0	0
LINCO	788	822	660	819	497	514	484	333	268	174	150	243	67	0	0	0	0	0
MERCU	4476	4549	3488	4031	3860	4395	2732	2250	1540	999	490	1017	288	0	13	5	14	10
OLDSM	4513	4672	4915	5190	5957	5118	4695	3621	2632	7	711	152	19	48	0	0	1	1
PLYMO	8525	8739	6592	7096	7129	5727	5924	5203	2710	1499	0	549	190	63	0	0	0	0
PONTI	4683	4830	5427	7130	8958	7375	6205	5368	4115	3707	1665	41	507	116	0	0	1	2
IMPOR	36673	38554	19751	21156	19104	13661	9883	7551	6453	5431	3932	3546	3154	2484	1360	549	222	22

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	AMMOT	GREML	2750	232	A	1	0	229	463	480	496
72	AMMOT	GREML	2750	232	S3	1	0	258	522	541	559
72	AMMOT	HORNE	3000	232	A	1	0	289	585	606	626
72	AMMOT	HORNE	3000	232	S3	1	0	125	254	263	272
72	AMMOT	HORNE	3500	360	A	2	0	25	51	53	55
72	AMMOT	HORNE	3500	360	S3	2	0	11	22	23	23
72	AMMOT	MATAD	3500	232	A	1	0	117	237	246	254
72	AMMOT	MATAD	3500	232	S3	1	0	6	13	14	14
72	AMMOT	MATAD	4000	304	A	1	0	250	505	523	541
72	AMMOT	MATAD	4000	304	S3	1	0	14	29	30	31
72	AMMOT	AMBAS	3500	258	A	1	0	5	10	10	11
72	AMMOT	AMBAS	4000	304	A	2	0	368	744	771	797
72	AMMOT	JAVEL	3000	232	A	1	0	26	52	54	56
72	AMMOT	JAVEL	3000	232	S3	1	0	3	6	6	6
72	AMMOT	JAVEL	3000	232	S4	1	0	1	3	3	3
72	AMMOT	JAVEL	3500	360	A	2	0	150	304	314	325
72	AMMOT	JAVEL	3500	360	S3	2	0	17	36	37	38
72	AMMOT	JAVEL	3500	360	S4	2	0	9	18	19	19
72	BUICK	SKYLA	3500	350	A	2	0	550	965	1005	1042
72	BUICK	SKYLA	3500	350	S4	2	0	5	9	10	10
72	BUICK	LESAB	4500	350	A	2	0	479	843	875	906
72	BUICK	CENTU	4500	455	A	4	0	200	352	366	379
72	BUICK	ELECT	5000	455	A	4	0	356	696	723	749
72	BUICK	RIVIE	4500	455	A	4	0	116	204	212	220
72	BUICK	STAWA	0	0	0	0	0	106	187	194	201
72	CADIL	CALAI	5000	472	A	4	0	65	108	113	118
72	CADIL	DEVIL	5000	472	A	4	0	647	1065	1120	1171
72	CADIL	FLEET	5000	472	A	4	0	69	113	119	124
72	CADIL	ELDOR	5000	500	A	4	0	124	206	216	225
72	CHEVR	VEGA	2500	140	A	1	0	651	1236	1265	1302
72	CHEVR	VEGA	2500	140	S3	1	0	382	682	701	719
72	CHEVR	VEGA	2500	140	S4	1	0	531	949	975	1000
72	CHEVR	NOVA	3500	250	A	1	0	507	906	930	955
72	CHEVR	NOVA	3500	250	S3	1	0	101	180	185	190
72	CHEVR	NOVA	3500	250	S4	1	0	12	22	22	23
72	CHEVR	NOVA	3500	307	A	2	0	534	954	980	1006
72	CHEVR	NOVA	3500	307	S3	2	0	106	190	195	200
72	CHEVR	NOVA	3500	307	S4	2	0	13	23	24	24
72	CHEVR	CHEVE	3500	250	A	1	0	120	214	220	226
72	CHEVR	CHEVE	3500	250	S3	1	0	3	7	7	7
72	CHEVR	CHEVE	3500	250	S4	1	0	4	7	7	7
72	CHEVR	CHEVE	3500	307	A	2	0	1701	3040	3122	3204
72	CHEVR	CHEVE	3500	307	S3	2	0	56	100	103	106
72	CHEVR	CHEVE	3500	307	S4	2	0	58	103	106	109
72	CHEVR	CHEVR	4000	250	A	1	0	59	106	109	112

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	CHEVR	CHEVR	4000	250	S3	1	0	0	0	0	0
72	CHEVR	CHEVR	4000	350	A	2	0	1992	3561	3656	3752
72	CHEVR	CHEVR	4000	400	S3	2	0	15	27	28	29
72	CHEVR	CAMER	3500	250	A	1	0	53	94	97	99
72	CHEVR	CAMER	3500	250	S3	1	0	7	13	13	14
72	CHEVR	CAMER	3500	250	S4	1	0	6	11	11	11
72	CHEVR	CAMER	3500	307	A	2	0	488	873	896	920
72	CHEVR	CAMER	3500	307	S3	2	0	69	124	127	130
72	CHEVR	CAMER	3500	307	S4	2	0	57	102	105	107
72	CHEVR	CORVE	3500	350	A	4	0	59	106	108	111
72	CHEVR	CORVE	3500	350	S4	4	0	69	124	127	130
72	CHEVR	STAWA	0	0	0	0	0	1051	1879	1929	1960
72	CHRYS	NEWPO	4500	360	A	2	0	540	1055	1077	1098
72	CHRYS	NEWPO	4500	360	S3	2	0	7	13	14	14
72	CHRYS	300	4500	440	A	4	0	125	244	249	255
72	CHRYS	NEWYO	4500	400	A	4	0	180	352	359	366
72	CHRYS	STAWA	0	0	0	0	0	88	173	176	180
72	DODGE	DART	3000	198	A	1	0	625	1058	1094	1131
72	DODGE	DART	3000	198	S3	1	0	54	91	94	98
72	DODGE	DART	3000	198	S4	1	0	6	11	12	12
72	DODGE	DART	3500	318	A	2	0	285	482	498	515
72	DODGE	DART	3500	318	S3	4	0	24	41	43	44
72	DODGE	DART	3500	318	S4	4	0	3	5	5	5
72	DODGE	CHALL	3500	198	A	1	0	5	9	10	10
72	DODGE	CHALL	3500	198	S3	1	0	0	0	0	0
72	DODGE	CHALL	3500	198	S4	1	0	0	0	0	0
72	DODGE	CHALL	3500	225	A	1	0	7	12	13	13
72	DODGE	CHALL	3500	225	S3	1	0	0	0	0	0
72	DODGE	CHALL	3500	225	S4	1	0	0	0	0	0
72	DODGE	CHALL	3500	318	A	2	0	179	303	313	324
72	DODGE	CHALL	3500	318	S3	2	0	11	20	20	21
72	DODGE	CHALL	3500	318	S4	2	0	10	18	18	19
72	DODGE	CORON	3500	225	A	1	0	42	72	74	77
72	DODGE	CORON	3500	225	S3	1	0	1	2	2	2
72	DODGE	CORON	3500	225	S4	1	0	0	0	0	0
72	DODGE	CORON	3500	318	A	2	0	727	1230	1272	1315
72	DODGE	CORON	3500	318	S3	2	0	25	42	43	45
72	DODGE	CORON	3500	318	S4	2	0	9	15	15	16
72	DODGE	CORON	3500	440	A	4	0	37	64	66	68
72	DODGE	CORON	3500	440	S3	4	0	1	2	2	2
72	DODGE	CORON	3500	440	S4	4	0	0	0	0	0
72	DODGE	CHARG	3500	225	A	1	0	6	11	12	12
72	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0
72	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
72	DODGE	CHARG	3500	318	A	2	0	118	199	206	213

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	DODGE	CHARG	3500	318	S3	2	0	4	6	7	7
72	DODGE	CHARG	3500	318	S4	2	0	1	2	2	2
72	DODGE	CHARG	3500	440	A	4	0	13	22	22	23
72	DODGE	CHARG	3500	440	S3	4	0	0	0	0	0
72	DODGE	CHARG	3500	440	S4	4	0	0	0	0	0
72	DODGE	POLAR	4000	225	A	1	0	1	2	2	2
72	DODGE	POLAR	4000	225	S3	1	0	0	0	0	0
72	DODGE	POLAR	4000	318	A	2	0	425	720	745	769
72	DODGE	POLAR	4000	318	S3	2	0	1	2	2	2
72	DODGE	MONAC	4500	360	A	2	0	148	250	259	267
72	DODGE	MONAC	4500	440	A	4	0	148	250	259	267
72	DODGE	STAWA	0	0	0	0	0	370	626	647	669
72	FORD	PINTO	2250	98	A	1	0	957	1656	1705	1754
72	FORD	PINTO	2250	98	S4	1	0	1101	1906	1962	2018
72	FORD	MAVER	3000	170	A	1	0	810	1403	1444	1485
72	FORD	MAVER	3000	170	S3	1	0	227	393	405	416
72	FORD	MAVER	3000	302	A	2	0	102	176	182	187
72	FORD	MAVER	3000	302	S3	2	0	28	49	51	52
72	FORD	TORIN	3500	250	A	1	0	222	384	395	407
72	FORD	TORIN	3500	250	S3	1	0	9	15	16	16
72	FORD	TORIN	3500	250	S4	1	0	2	4	4	4
72	FORD	TORIN	3500	302	A	2	0	1873	3241	3337	3432
72	FORD	TORIN	3500	302	S3	2	0	76	133	136	140
72	FORD	TORIN	3500	302	S4	2	0	21	37	38	39
72	FORD	TORIN	3500	351	A	4	0	402	695	716	736
72	FORD	TORIN	3500	351	S3	4	0	16	28	29	30
72	FORD	TORIN	3500	351	S4	4	0	4	8	8	8
72	FORD	FORD	4000	240	A	1	0	32	56	58	59
72	FORD	FORD	4000	240	S3	1	0	0	0	0	0
72	FORD	FORD	4000	302	A	2	0	3247	5620	5785	5950
72	FORD	FORD	4000	400	A	2	0	3280	5677	5844	6010
72	FORD	MUSTA	3000	250	A	1	0	106	183	188	194
72	FORD	MUSTA	3000	250	S3	1	0	12	22	22	23
72	FORD	MUSTA	3000	250	S4	1	0	6	10	11	11
72	FORD	MUSTA	3000	302	A	2	0	976	1689	1739	1788
72	FORD	MUSTA	3000	302	S3	2	0	117	202	208	214
72	FORD	MUSTA	3000	302	S4	2	0	57	99	102	105
72	FORD	TBIRD	4500	429	A	4	0	290	503	518	532
72	FORD	STAWA	0	0	0	0	0	232	402	414	426
72	IMPER	LEBAR	5000	440	A	4	0	90	128	132	136
72	LINCO	CONTI	5000	460	A	4	0	270	405	424	443
72	LINCO	MARK4	5000	460	A	4	0	210	314	329	344
72	MERCU	MONTE	3500	250	A	1	0	44	75	76	78
72	MERCU	MONTE	3500	302	A	2	0	476	812	826	840
72	MERCU	MONTE	4500	351	A	2	0	105	179	182	186

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	MERCU	MARQU	4500	429	A	4	0	131	224	228	232
72	MERCU	COUGA	3500	351	A	2	0	573	978	994	1011
72	MERCU	COMET	3000	170	A	1	0	366	625	635	646
72	MERCU	COMET	3000	170	S3	1	0	102	175	178	181
72	MERCU	COMET	3000	302	A	2	0	225	384	391	397
72	MERCU	COMET	3000	302	S3	2	0	63	107	109	111
72	MERCU	STAWA	0	0	0	0	0	448	764	777	790
72	OLDSM	F-85	3500	350	A	2	0	1131	2052	2130	2208
72	OLDSM	F-85	3500	350	S3	2	0	9	16	17	17
72	OLDSM	F-85	3500	350	S4	2	0	206	375	389	404
72	OLDSM	DELTA	4500	350	A	2	0	465	844	876	908
72	OLDSM	DELTA	4500	455	A	4	0	372	676	702	728
72	OLDSM	98	4500	455	A	4	0	376	682	708	734
72	OLDSM	TORON	5000	455	A	4	0	130	237	246	255
72	OLDSM	STAWA	0	0	0	0	0	175	316	330	342
72	PLYMO	VALIA	3000	198	A	1	0	989	1672	1717	1761
72	PLYMO	VALIA	3000	198	S3	1	0	194	328	336	345
72	PLYMO	VALIA	3000	198	S4	1	0	13	22	22	23
72	PLYMO	VALIA	3500	340	A	2	0	345	584	600	615
72	PLYMO	VALIA	3500	340	S3	2	0	67	114	117	120
72	PLYMO	VALIA	3500	340	S4	2	0	4	7	7	8
72	PLYMO	SATEL	3500	225	A	1	0	52	89	91	94
72	PLYMO	SATEL	3500	225	S3	1	0	2	4	4	4
72	PLYMO	SATEL	3500	225	S4	1	0	10	17	17	18
72	PLYMO	SATEL	3500	318	A	2	0	616	1042	1070	1098
72	PLYMO	SATEL	3500	400	S3	2	0	11	19	19	20
72	PLYMO	SATEL	3500	400	S4	2	0	7	13	13	13
72	PLYMO	FURY	4000	225	A	1	0	77	130	133	137
72	PLYMO	FURY	4000	318	S3	1	0	17	30	30	31
72	PLYMO	FURY	4000	383	A	2	0	1464	2476	2541	2607
72	PLYMO	FURY	4000	383	S3	2	0	339	573	588	603
72	PLYMO	BARRA	3500	198	A	1	0	18	31	32	33
72	PLYMO	BARRA	3500	198	S3	1	0	2	3	3	3
72	PLYMO	BARRA	3500	318	S4	1	0	2	4	5	5
72	PLYMO	BARRA	3500	340	A	2	0	51	87	90	92
72	PLYMO	BARRA	3500	340	S3	2	0	5	9	9	9
72	PLYMO	BARRA	3500	340	S4	2	0	7	13	13	14
72	PLYMO	BARRA	4000	383	A	4	0	33	55	57	58
72	PLYMO	BARRA	4000	340	S3	4	0	3	5	6	6
72	PLYMO	BARRA	4000	340	S4	4	0	5	8	8	8
72	PLYMO	STAWA	0	0	0	0	0	423	715	734	753
72	PONTI	LEMAN	3500	250	A	1	0	26	47	48	50
72	PONTI	LEMAN	3500	250	S3	1	0	0	0	0	0
72	PONTI	LEMAN	4000	400	A	2	0	520	932	963	994
72	PONTI	LEMAN	4000	400	S3	2	0	7	13	13	14

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	PONTI	CATAL	4500	350	A	2	0	462	828	855	883
72	PONTI	CATAL	4500	400	A	4	0	15	27	28	29
72	PONTI	BONNE	4500	455	A	4	0	280	502	519	536
72	PONTI	GRANV	4500	455	A	4	0	117	209	216	223
72	PONTI	GRANP	4000	400	A	4	0	249	447	462	477
72	PONTI	FIREB	3500	250	A	1	0	11	20	20	21
72	PONTI	FIREB	3500	250	S3	1	0	0	1	1	1
72	PONTI	FIREB	3500	350	S4	1	0	0	1	1	1
72	PONTI	FIREB	3500	400	A	2	0	189	338	350	361
72	PONTI	FIREB	3500	400	S3	2	0	13	23	24	25
72	PONTI	FIREB	3500	400	S4	2	0	12	23	23	24
72	PONTI	STAWA	0	0	0	0	0	252	452	467	483
72	IMPOR	VOLKS	2250	0	0	0	0	6323	15213	16083	16953
72	IMPOR	TOYOT	2500	0	0	0	0	2054	4942	5225	5508
72	IMPOR	DATSU	2250	0	0	0	0	1117	2688	2842	2996
72	IMPOR	OPEL	2250	0	0	0	0	924	2224	2351	2479
72	IMPOR	VOLVO	3000	0	0	0	0	496	1194	1262	1331
72	IMPOR	OTHER	2250	0	0	0	0	2761	6644	7024	7404

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	AMMOT	GREML	2750	232	A	1	229	463	480	496	512
71	AMMOT	GREML	2750	232	S3	1	258	522	541	559	578
71	AMMOT	HORNE	3000	232	A	1	289	585	606	626	647
71	AMMOT	HORNE	3000	232	S3	1	125	254	263	272	280
71	AMMOT	HORNE	3500	360	A	2	25	51	53	55	56
71	AMMOT	HORNE	3500	360	S3	2	11	22	23	23	24
71	AMMOT	MATAD	3500	232	A	1	117	237	246	254	262
71	AMMOT	MATAD	3500	232	S3	1	6	13	14	14	15
71	AMMOT	MATAD	4000	304	A	1	250	505	523	541	559
71	AMMOT	MATAD	4000	304	S3	1	14	29	30	31	32
71	AMMOT	AMBAS	3500	258	A	1	5	10	10	11	11
71	AMMOT	AMBAS	4000	304	A	2	368	744	771	797	823
71	AMMOT	JAVEL	3000	232	A	1	26	52	54	56	56
71	AMMOT	JAVEL	3000	232	S3	1	3	6	6	6	6
71	AMMOT	JAVEL	3000	232	S4	1	1	3	3	3	3
71	AMMOT	JAVEL	3500	360	A	2	150	304	314	325	336
71	AMMOT	JAVEL	3500	360	S3	2	17	36	37	38	39
71	AMMOT	JAVEL	3500	360	S4	2	9	18	19	19	20
71	BUICK	SKYLA	3500	250	A	1	12	22	23	24	25
71	BUICK	SKYLA	3500	250	S4	1	0	0	0	0	0
71	BUICK	SKYLA	3500	350	A	2	550	969	1005	1042	1078
71	BUICK	SKYLA	3500	350	S4	2	5	9	10	10	10
71	BUICK	LESAB	4500	350	A	2	479	843	875	906	938
71	BUICK	CENTU	4500	455	A	4	200	352	366	379	392
71	BUICK	ELECT	5000	455	A	4	396	696	723	749	775
71	BUICK	RIVIE	4500	455	A	4	116	204	212	220	227
71	BUICK	STAWA	0	0	C	0	106	187	194	201	208
71	CADIL	CALAI	5000	472	A	4	7	11	12	12	13
71	CADIL	DEVIL	5000	472	A	4	652	1143	1198	1252	1307
71	CADIL	FLEET	5000	472	A	4	73	121	127	133	139
71	CADIL	ELDOR	5000	500	A	4	133	220	231	241	252
71	CHEVR	VEGA	2500	140	A	1	691	1236	1269	1302	1336
71	CHEVR	VEGA	2500	140	S3	1	382	682	701	719	737
71	CHEVR	VEGA	2500	140	S4	1	531	949	975	1000	1026
71	CHEVR	NOVA	3500	250	A	1	507	906	930	955	979
71	CHEVR	NOVA	3500	250	S3	1	101	180	185	190	195
71	CHEVR	NOVA	3500	250	S4	1	12	22	22	23	23
71	CHEVR	NOVA	3500	307	A	2	534	954	980	1006	1031
71	CHEVR	NOVA	3500	307	S3	2	106	190	195	200	205
71	CHEVR	NOVA	3500	307	S4	2	13	23	24	24	25
71	CHEVR	CHEVE	3500	250	A	1	120	214	220	226	232
71	CHEVR	CHEVE	3500	250	S3	1	3	7	7	7	7
71	CHEVR	CHEVE	3500	250	S4	1	4	7	7	7	7
71	CHEVR	CHEVE	3500	307	A	2	1701	3040	3122	3204	3286
71	CHEVR	CHEVE	3500	307	S3	2	56	100	103	106	108

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	CHEVR	CHEVE	3500	307	S4	2	58	103	106	109	112
71	CHEVR	CHEVR	4000	250	A	1	59	106	109	112	115
71	CHEVR	CHEVR	4000	250	S3	1	0	0	0	0	0
71	CHEVR	CHEVR	4000	350	A	2	1992	3561	3656	3752	3848
71	CHEVR	CHEVR	4000	400	S3	2	15	27	28	29	30
71	CHEVR	CAMAR	3500	250	A	1	53	94	97	99	102
71	CHEVR	CAMAR	3500	250	S3	1	7	13	13	14	14
71	CHEVR	CAMAR	3500	250	S4	1	6	11	11	11	12
71	CHEVR	CAMAR	3500	307	A	2	488	873	896	920	943
71	CHEVR	CAMAR	3500	307	S3	2	69	124	127	130	134
71	CHEVR	CAMAR	3500	307	S4	2	57	102	105	107	110
71	CHEVR	CORVE	3500	350	A	4	59	106	108	111	114
71	CHEVR	CORVE	3500	350	S4	4	69	124	127	130	134
71	CHEVR	STAWA	0	0	0	0	1051	1879	1929	1980	2030
71	CHRYS	NEWPO	4500	383	A	2	590	1055	1077	1098	1120
71	CHRYS	NEWPO	4500	383	S3	2	7	13	14	14	14
71	CHRYS	300	4500	440	A	4	129	244	249	255	260
71	CHRYS	NEWYO	4500	400	A	4	180	352	359	366	374
71	CHRYS	STAWA	0	0	0	0	88	173	176	180	183
71	DODGE	DART	3000	198	A	1	629	1058	1094	1131	1167
71	DODGE	DART	3000	198	S3	1	54	91	94	98	101
71	DODGE	DART	3000	198	S4	1	6	11	12	12	12
71	DODGE	DART	3500	340	A	2	289	482	498	515	531
71	DODGE	DART	3500	340	S3	4	24	41	43	44	46
71	DODGE	DART	3500	340	S4	4	3	5	5	5	5
71	DODGE	CHALL	3500	198	A	1	5	9	10	10	10
71	DODGE	CHALL	3500	198	S3	1	0	0	0	0	0
71	DODGE	CHALL	3500	198	S4	1	0	0	0	0	0
71	DODGE	CHALL	3500	225	A	1	7	12	13	13	14
71	DODGE	CHALL	3500	225	S3	1	0	0	0	0	0
71	DODGE	CHALL	3500	225	S4	1	0	0	0	0	0
71	DODGE	CHALL	3500	383	A	2	179	303	313	324	334
71	DODGE	CHALL	3500	383	S3	2	11	20	20	21	22
71	DODGE	CHALL	3500	383	S4	2	10	18	18	19	19
71	DODGE	CORON	3500	225	A	1	42	72	74	77	79
71	DODGE	CORON	3500	225	S3	1	1	2	2	2	2
71	DODGE	CORON	3500	225	S4	1	0	0	0	0	1
71	DODGE	CORON	3500	318	A	2	727	1230	1272	1315	1357
71	DODGE	CORON	3500	318	S3	2	25	42	43	45	46
71	DODGE	CORON	3500	318	S4	2	9	15	15	16	17
71	DODGE	CORON	3500	440	A	4	37	64	66	68	70
71	DODGE	CORON	3500	440	S3	4	1	2	2	2	2
71	DODGE	CORON	3500	440	S4	4	0	0	0	0	0
71	DODGE	CHARG	3500	225	A	1	6	11	12	12	12
71	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
71	DODGE	CHARG	3500	318	A	2	118	199	206	213	220
71	DODGE	CHARG	3500	318	S3	2	4	6	7	7	7
71	DODGE	CHARG	3500	318	S4	2	1	2	2	2	2
71	DODGE	CHARG	3500	440	A	4	13	22	22	23	24
71	DODGE	CHARG	3500	440	S3	4	0	0	0	0	0
71	DODGE	CHARG	3500	440	S4	4	0	0	0	0	0
71	DODGE	POLAR	4000	225	A	1	1	2	2	2	2
71	DODGE	POLAR	4000	225	S3	1	0	0	0	0	0
71	DODGE	POLAR	4000	383	A	2	425	720	745	769	794
71	DODGE	POLAR	4000	383	S3	2	1	2	2	2	2
71	DODGE	MONAC	4500	383	A	2	148	250	259	267	276
71	DODGE	MONAC	4500	383	A	4	148	250	259	267	276
71	DODGE	STAWA	0	0	0	0	370	626	647	669	690
71	FORD	PINTO	2250	98	A	1	557	1656	1705	1754	1803
71	FORD	PINTO	2250	98	S4	1	1101	1906	1962	2018	2074
71	FORD	MAVER	3000	170	A	1	810	1403	1444	1485	1526
71	FORD	MAVER	3000	170	S3	1	227	393	405	416	428
71	FORD	MAVER	3000	302	A	2	102	176	182	187	192
71	FORD	MAVER	3000	302	S3	2	28	49	51	52	54
71	FORD	TORIN	3500	250	A	1	222	384	395	407	418
71	FORD	TORIN	3500	250	S3	1	9	15	16	16	17
71	FORD	TORIN	3500	250	S4	1	2	4	4	4	4
71	FORD	TORIN	3500	351	A	2	1873	3241	3337	3432	3527
71	FORD	TORIN	3500	351	S3	2	76	133	136	140	144
71	FORD	TORIN	3500	351	S4	2	21	37	38	39	40
71	FORD	TORIN	3500	351	A	4	402	695	716	736	757
71	FORD	TORIN	3500	351	S3	4	16	28	29	30	31
71	FORD	TORIN	3500	351	S4	4	4	8	8	8	8
71	FORD	FORD	4000	240	A	1	32	56	58	59	61
71	FORD	FORD	4000	240	S3	1	0	0	0	0	0
71	FORD	FORD	4000	351	A	2	3247	5620	5785	5950	6116
71	FORD	FORD	4000	400	A	2	3280	5677	5844	6010	6177
71	FORD	MUSTA	3000	250	A	1	106	183	188	194	199
71	FORD	MUSTA	3000	250	S3	1	12	22	22	23	23
71	FORD	MUSTA	3000	250	S4	1	6	10	11	11	11
71	FORD	MUSTA	3000	302	A	2	976	1689	1739	1788	1838
71	FORD	MUSTA	3000	302	S3	2	117	202	208	214	220
71	FORD	MUSTA	3000	302	S4	2	57	99	102	105	108
71	FORD	TBIRD	4500	429	A	4	290	503	518	532	547
71	FORD	STAWA	0	0	0	0	232	402	414	426	438
71	IMPER	LEBAR	5000	440	A	4	90	128	132	136	140
71	LINCO	CONTI	5000	460	A	4	270	405	424	443	463
71	LINCO	MARK3	5000	460	A	4	210	314	329	344	359
71	MERCU	MONTE	3500	250	A	1	44	75	76	78	79

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	MERCU	MONTE	3500	351	A	2	476	812	826	840	854
71	MERCU	MONTR	4500	400	A	2	105	179	182	186	189
71	MERCU	MARQU	4500	429	A	4	131	224	228	232	236
71	MERCU	COUGA	3500	351	A	2	573	978	994	1011	1027
71	MERCU	COMET	3000	170	A	1	366	625	635	646	656
71	MERCU	COMET	3000	170	S3	1	102	175	178	181	184
71	MERCU	COMET	3000	302	A	2	225	384	391	397	404
71	MERCU	COMET	3000	302	S3	2	63	107	109	111	113
71	MERCU	STAWA	0	0	0	0	448	764	777	790	803
71	OLDSM	F-85	3500	250	A	1	13	24	25	26	27
71	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
71	OLDSM	F-85	3500	250	S4	1	0	0	0	0	0
71	OLDSM	F-85	3500	350	A	2	1131	2052	2130	2208	2286
71	OLDSM	F-85	3500	350	S3	2	9	16	17	17	18
71	OLDSM	F-85	3500	350	S4	2	5	16	17	17	18
71	OLDSM	DELTA	4500	350	A	2	465	844	876	908	940
71	OLDSM	DELTA	4500	455	A	4	272	676	702	728	754
71	OLDSM	98	4500	455	A	4	376	682	708	734	760
71	OLDSM	TORON	5000	455	A	4	130	237	246	255	264
71	OLDSM	STAWA	0	0	0	0	175	318	330	342	354
71	PLYMO	VALIA	3000	198	A	1	989	1672	1717	1761	1805
71	PLYMO	VALIA	3000	198	S3	1	194	328	336	345	354
71	PLYMO	VALIA	3000	198	S4	1	13	22	22	23	24
71	PLYMO	VALIA	3500	318	A	2	345	584	600	615	631
71	PLYMO	VALIA	3500	318	S3	2	67	114	117	120	123
71	PLYMO	VALIA	3500	318	S4	2	4	7	7	8	8
71	PLYMO	SATEL	3500	225	A	1	52	89	91	94	96
71	PLYMO	SATEL	3500	225	S3	1	2	4	4	4	4
71	PLYMO	SATEL	3500	225	S4	1	10	17	17	18	18
71	PLYMO	SATEL	3500	383	A	2	616	1042	1070	1098	1125
71	PLYMO	SATEL	3500	383	S3	2	26	44	46	47	48
71	PLYMO	SATEL	3500	383	S4	2	17	30	31	31	32
71	PLYMO	FURY	4000	225	A	1	77	130	133	137	140
71	PLYMO	FURY	4000	225	S3	1	17	30	30	31	32
71	PLYMO	FURY	4000	383	A	2	1464	2476	2541	2607	2672
71	PLYMO	FURY	4000	383	S3	2	339	573	588	603	618
71	PLYMO	BARRA	3500	198	A	1	18	31	32	33	34
71	PLYMO	BARRA	3500	198	S3	1	2	3	3	3	3
71	PLYMO	BARRA	3500	198	S4	1	2	4	5	5	5
71	PLYMO	BARRA	3500	340	A	2	51	87	90	92	94
71	PLYMO	BARRA	3500	340	S3	2	5	9	9	9	10
71	PLYMO	BARRA	3500	340	S4	2	7	13	13	14	14
71	PLYMO	BARRA	4000	383	A	4	33	55	57	58	60
71	PLYMO	BARRA	4000	383	S3	4	3	5	6	6	6
71	PLYMO	BARRA	4000	383	S4	4	5	8	8	8	9

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	PLYMO	STAWA	0	0	0	0	423	715	734	753	771
71	PONTI	LEMAN	3500	250	A	1	26	47	48	50	52
71	PONTI	LEMAN	3500	250	S3	1	0	0	0	0	0
71	PONTI	LEMAN	4000	400	A	2	659	1182	1221	1260	1300
71	PONTI	LEMAN	4000	400	S3	2	9	16	17	17	18
71	PONTI	CATAL	4500	350	A	2	462	828	855	883	911
71	PONTI	CATAL	4500	400	A	4	154	276	285	294	303
71	PONTI	BONNE	4500	455	A	4	280	502	515	536	552
71	PONTI	GRANV	4500	455	A	4	117	209	216	223	230
71	PONTI	GRANP	4000	400	A	4	249	447	462	477	492
71	PONTI	FIREB	3500	250	A	1	11	20	20	21	22
71	PONTI	FIREB	3500	250	S3	1	0	1	1	1	1
71	PONTI	FIREB	3500	250	S4	1	0	1	1	1	1
71	PONTI	FIREB	3500	400	A	2	185	338	350	361	373
71	PONTI	FIREB	3500	400	S3	2	13	23	24	25	25
71	PONTI	FIREB	3500	400	S4	2	12	23	23	24	25
71	PONTI	STAWA	0	0	0	0	252	452	467	483	498
71	IMPOR	VOLKS	2250	0	0	0	6323	15213	16083	16953	17823
71	IMPOR	TOYOT	2500	0	0	0	2054	4942	5225	5508	5790
71	IMPOR	DATSU	2250	0	0	0	1117	2688	2842	2996	3145
71	IMPOR	OPEL	2250	0	0	0	924	2224	2351	2479	2606
71	IMPOR	VOLVO	3000	0	0	0	496	1194	1262	1331	1349
71	IMPOR	OTHER	2250	0	0	0	2761	6644	7024	7404	7784

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	AMMOT	HORNE	3000	199	A	1	234	213	221	228	235
70	AMMOT	HORNE	3000	199	S3	1	113	103	107	111	114
70	AMMOT	HORNE	3000	232	A	1	214	195	202	209	215
70	AMMOT	HORNE	3000	232	S3	1	72	66	68	70	72
70	AMMOT	HORNE	3000	304	A	2	87	79	82	85	87
70	AMMOT	HORNE	3000	304	S3	2	29	26	27	28	29
70	AMMOT	REBEL	3500	232	A	1	213	195	202	208	215
70	AMMOT	REBEL	3500	232	S3	1	40	37	38	39	40
70	AMMOT	REBEL	3500	232	S4	1	7	6	6	6	7
70	AMMOT	REBEL	3500	304	A	1	222	203	210	217	224
70	AMMOT	REBEL	3500	304	S3	2	42	38	39	41	42
70	AMMOT	REBEL	3500	304	S4	2	7	6	6	7	7
70	AMMOT	AMBAS	3500	232	A	1	46	42	43	45	46
70	AMMOT	AMBAS	3500	232	S3	1	2	2	2	2	2
70	AMMOT	AMBAS	4000	304	A	2	571	521	539	557	575
70	AMMOT	AMBAS	4000	304	S3	2	28	26	27	28	28
70	AMMOT	JAVEL	3000	232	A	1	39	36	37	38	40
70	AMMOT	JAVEL	3000	232	S3	1	10	9	9	10	10
70	AMMOT	JAVEL	3000	232	S4	1	4	4	4	4	4
70	AMMOT	JAVEL	3500	304	A	2	198	181	187	193	199
70	AMMOT	JAVEL	3500	304	S3	2	52	47	49	50	52
70	AMMOT	JAVEL	3500	304	S4	2	22	20	21	22	23
70	AMMOT	AMX	3500	360	A	4	16	15	15	16	16
70	AMMOT	AMX	3500	360	S3	4	24	22	23	24	24
70	BUICK	SKYLA	3500	250	A	1	44	41	43	44	46
70	BUICK	SKYLA	3500	250	S3	1	0	0	0	0	0
70	BUICK	SKYLA	3500	250	S4	1	0	0	0	0	0
70	BUICK	SKYLA	3500	350	A	2	1487	1356	1447	1497	1548
70	BUICK	SKYLA	3500	350	S3	2	18	17	17	18	19
70	BUICK	SKYLA	3500	350	S4	2	16	15	16	16	17
70	BUICK	LESAB	4500	350	A	2	868	815	844	874	903
70	BUICK	LESAB	4500	455	A	4	289	271	281	291	301
70	BUICK	WILDC	4500	455	A	4	426	400	414	429	443
70	BUICK	ELECT	4500	455	A	4	842	790	819	847	876
70	BUICK	RIVIE	4500	455	A	4	257	242	250	259	268
70	BUICK	STAWA	0	0	0	0	226	212	220	227	235
70	CADIL	CALAI	5000	472	A	4	130	132	136	144	150
70	CADIL	DEVIL	5000	472	A	4	1282	1301	1360	1420	1479
70	CADIL	FLEET	5000	472	A	4	137	139	145	152	158
70	CADIL	ELDOR	5000	500	A	4	183	185	194	202	211
70	CHEVR	NOVA	3000	153	A	1	14	13	13	14	14
70	CHEVR	NOVA	3000	153	S3	1	3	3	3	3	3
70	CHEVR	NOVA	3000	153	S4	1	1	0	0	0	0
70	CHEVR	NOVA	3500	230	A	1	1155	1059	1087	1115	1108
70	CHEVR	NOVA	3500	230	S3	1	301	276	283	291	289

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	CHEVR	NOVA	3500	230	S4	1	81	74	76	78	78
70	CHEVR	NOVA	3500	350	A	2	926	849	872	894	889
70	CHEVR	NOVA	3500	350	S3	2	241	221	227	233	232
70	CHEVR	NOVA	3500	350	S4	2	65	59	61	63	62
70	CHEVR	CHEVE	3500	230	A	1	193	177	181	186	185
70	CHEVR	CHEVE	3500	230	S3	1	10	9	9	9	9
70	CHEVR	CHEVE	3500	230	S4	1	22	20	21	21	21
70	CHEVR	CHEVE	3500	350	A	2	2781	2550	2617	2684	2669
70	CHEVR	CHEVE	3500	350	S3	2	146	134	137	141	140
70	CHEVR	CHEVE	3500	350	S4	2	321	294	302	310	308
70	CHEVR	BISCA	4000	250	A	1	15	14	14	15	15
70	CHEVR	BISCA	4000	250	S3	1	0	0	0	0	0
70	CHEVR	BISCA	4000	350	A	2	620	568	583	598	595
70	CHEVR	BISCA	4000	350	S3	2	13	12	12	12	12
70	CHEVR	BELAI	4000	250	A	1	30	27	28	29	28
70	CHEVR	BELAI	4000	250	S3	1	0	0	0	0	0
70	CHEVR	BELAI	4000	350	A	2	1176	1078	1106	1134	1128
70	CHEVR	BELAI	4000	350	S3	2	25	23	23	24	24
70	CHEVR	IMPAL	4000	250	A	1	145	133	136	140	139
70	CHEVR	IMPAL	4000	250	S3	1	3	2	2	3	2
70	CHEVR	IMPAL	4000	350	A	2	5669	5198	5335	5471	5441
70	CHEVR	IMPAL	4000	350	S3	2	121	111	114	117	116
70	CHEVR	CAPRI	4000	350	A	4	977	896	919	943	938
70	CHEVR	CAMER	3500	230	A	1	81	74	76	78	78
70	CHEVR	CAMER	3500	230	S3	1	13	12	12	12	12
70	CHEVR	CAMER	3500	230	S4	1	16	15	15	16	16
70	CHEVR	CAMER	3500	350	A	2	726	665	683	700	696
70	CHEVR	CAMER	3500	350	S3	2	118	108	111	114	113
70	CHEVR	CAMER	3500	350	S4	2	149	136	140	143	142
70	CHEVR	CORVE	3500	350	A	4	45	41	42	43	43
70	CHEVR	CORVE	3500	350	S4	4	108	99	102	104	104
70	CHEVR	STAWA	0	0	0	0	1640	1504	1543	1583	1574
70	CHRYS	NEWPO	4500	383	A	2	960	848	865	882	899
70	CHRYS	300	4500	440	A	4	219	194	198	202	206
70	CHRYS	NEWYO	4500	440	A	4	316	279	285	290	296
70	CHRYS	STAWA	0	0	0	0	155	137	140	142	145
70	DODGE	DART	3000	198	A	1	243	235	243	251	251
70	DODGE	DART	3000	198	S3	1	45	43	45	46	46
70	DODGE	DART	3000	198	S4	1	7	7	7	7	7
70	DODGE	DART	3500	340	A	2	105	102	105	108	108
70	DODGE	DART	3500	340	S3	2	19	19	19	20	20
70	DODGE	DART	3500	340	S4	2	3	3	3	3	3
70	DODGE	CHALL	3500	225	A	1	93	90	93	96	96
70	DODGE	CHALL	3500	225	S3	1	21	21	21	22	22
70	DODGE	CHALL	3500	225	S4	1	16	15	16	16	16

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	DODGE	CHALL	3500	383	A	4	576	555	577	596	595
70	DODGE	CHALL	3500	383	A	4	135	131	136	140	140
70	DODGE	CHALL	3500	383	A	4	100	97	101	104	104
70	DODGE	CORON	3500	225	A	1	124	120	124	128	128
70	DODGE	CORON	3500	225	S3	1	3	3	3	3	3
70	DODGE	CORON	3500	225	S4	1	7	7	7	8	8
70	DODGE	CORON	3500	318	A	2	765	742	766	791	790
70	DODGE	CORON	3500	318	S3	2	21	21	21	22	22
70	DODGE	CORON	3500	318	S4	2	47	46	47	49	49
70	DODGE	CORON	3500	383	A	4	254	246	254	262	262
70	DODGE	CORON	3500	383	S3	4	7	6	7	7	7
70	DODGE	CORON	3500	383	S4	4	15	15	15	16	16
70	DODGE	CORON	3500	440	A	4	127	123	127	131	131
70	DODGE	CORON	3500	440	S3	4	3	3	3	3	3
70	DODGE	CORON	3500	440	S4	4	7	7	7	8	8
70	DODGE	CHARG	3500	225	A	1	2	2	2	2	2
70	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0
70	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
70	DODGE	CHARG	3500	440	A	4	520	504	521	537	537
70	DODGE	CHARG	3500	440	S3	4	7	7	7	7	7
70	DODGE	CHARG	3500	440	S4	4	41	40	41	42	42
70	DODGE	POLAR	4500	318	A	2	659	678	701	723	723
70	DODGE	POLAR	4500	318	S3	2	2	2	2	2	2
70	DODGE	MONAC	4500	383	A	2	345	335	346	357	357
70	DODGE	STAWA	0	0	0	0	666	588	607	627	626
70	FORD	MAVER	2750	170	A	1	2066	2021	2075	2136	2115
70	FORD	MAVER	2750	170	S3	1	579	566	583	599	593
70	FORD	FALCO	3000	200	A	1	372	364	375	365	381
70	FORD	FALCO	3000	200	S3	1	82	81	83	85	84
70	FORD	FALCO	3000	302	A	2	86	84	86	89	88
70	FORD	FALCO	3000	302	S3	2	19	18	19	19	19
70	FORD	FAIRL	3500	250	A	1	471	460	473	487	482
70	FORD	FAIRL	3500	250	S3	1	47	46	48	49	49
70	FORD	FAIRL	3500	250	S4	1	25	24	25	25	25
70	FORD	FAIRL	4000	302	A	2	3057	3030	3116	3203	3171
70	FORD	FAIRL	4000	302	S3	2	314	307	316	325	322
70	FORD	FAIRL	4000	302	S4	2	164	160	165	170	168
70	FORD	CUSTO	4000	240	A	1	13	12	13	13	13
70	FORD	CUSTO	4000	240	S3	1	0	0	0	0	0
70	FORD	CUSTO	4000	302	A	2	1305	1277	1313	1350	1337
70	FORD	CUSTO	4000	302	S3	2	13	12	13	13	13
70	FORD	GALAX	4000	240	A	1	92	90	92	95	94
70	FORD	GALAX	4000	240	S3	1	1	1	1	1	1
70	FORD	GALAX	4000	302	A	2	4757	4654	4787	4920	4871
70	FORD	GALAX	4000	302	S3	2	97	94	97	100	99

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	FORD	LTD	4000	351	A	2	1945	1906	1961	2015	1995
70	FORD	LTD	4000	351	S3	2	39	38	40	41	40
70	FORD	MUSTA	3000	200	A	1	271	265	272	280	277
70	FORD	MUSTA	3000	200	S3	1	52	51	52	54	53
70	FORD	MUSTA	3000	200	S4	1	39	38	39	40	40
70	FORD	MUSTA	3000	302	A	2	888	869	894	918	909
70	FORD	MUSTA	3000	302	S3	2	171	168	173	177	176
70	FORD	MUSTA	3000	302	S4	2	130	127	130	134	133
70	FORD	MUSTA	3500	351	A	4	618	605	622	639	633
70	FORD	MUSTA	3500	351	S3	4	119	117	120	123	122
70	FORD	MUSTA	3500	351	S4	4	90	88	91	93	92
70	FORD	TBIRD	4500	429	A	4	626	614	632	649	643
70	FORD	STAWA	0	0	0	0	3806	3724	3830	3938	3857
70	IMPER	CROWN	5000	440	A	4	96	103	106	109	112
70	IMPER	LEBAR	5000	440	A	4	7	7	7	8	8
70	LINCO	CONTI	5000	460	A	4	388	363	379	396	412
70	LINCO	MARK3	5000	460	A	4	233	218	227	237	247
70	MERCU	MONTE	3500	250	A	1	160	166	169	171	174
70	MERCU	MONTE	3500	250	S3	1	8	8	8	8	8
70	MERCU	MONTE	3500	250	S4	1	5	5	5	5	5
70	MERCU	MONTE	3500	302	A	2	1204	1114	1132	1151	1169
70	MERCU	MONTE	3500	302	S3	2	56	54	55	55	56
70	MERCU	MONTE	3500	302	S4	2	37	34	35	36	36
70	MERCU	MONTR	4000	390	A	2	171	158	161	163	166
70	MERCU	MONTR	4000	390	S3	2	0	0	0	0	0
70	MERCU	MARQU	4500	390	A	2	171	158	161	163	166
70	MERCU	MARQU	4500	390	S3	2	0	0	0	0	0
70	MERCU	MARQU	4500	429	A	4	215	198	202	205	208
70	MERCU	COUGA	3500	302	A	2	565	522	531	540	548
70	MERCU	COUGA	3500	302	S3	2	30	28	26	25	25
70	MERCU	COUGA	3500	302	S4	2	17	15	16	16	16
70	MERCU	COUGA	3500	351	A	4	377	348	354	360	365
70	MERCU	COUGA	3500	351	S3	4	20	18	19	19	19
70	MERCU	COUGA	3500	351	S4	4	11	10	10	10	11
70	MERCU	STAWA	0	0	0	0	731	676	687	698	710
70	OLDSM	F-85	3500	250	A	1	51	45	47	48	50
70	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
70	OLDSM	F-85	3500	250	S4	1	1	1	1	1	1
70	OLDSM	F-85	4000	350	A	2	2397	2142	2221	2299	2378
70	OLDSM	F-85	4000	350	S3	2	24	22	23	23	24
70	OLDSM	F-85	4000	350	S4	2	74	66	69	71	74
70	OLDSM	F-85	4000	455	A	4	102	91	94	97	101
70	OLDSM	F-85	4000	455	S3	4	1	0	0	1	1
70	OLDSM	F-85	4000	455	S4	4	3	2	2	3	3
70	OLDSM	DEL88	4500	350	A	2	990	849	880	911	943

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	OLDSM	DEL88	4500	455	A	4	761	680	705	730	755
70	OLDSM	98	4500	455	A	4	768	686	711	737	762
70	OLDSM	TORON	4500	455	A	4	221	197	205	212	219
70	OLDSM	STAWA	0	0	0	0	358	320	331	343	355
70	PLYMO	VALIA	3000	198	A	1	1129	1057	1084	1111	1110
70	PLYMO	VALIA	3000	198	S3	1	312	292	300	307	307
70	PLYMO	VALIA	3000	198	S4	1	46	43	44	45	45
70	PLYMO	VALIA	3500	318	A	2	311	291	299	306	306
70	PLYMO	VALIA	3500	318	S3	2	86	80	82	84	84
70	PLYMO	VALIA	3500	318	S4	2	12	11	12	12	12
70	PLYMO	VALIA	3500	340	A	4	116	109	112	115	114
70	PLYMO	VALIA	3500	340	S3	4	32	30	31	31	31
70	PLYMO	VALIA	3500	340	S4	4	4	4	4	4	4
70	PLYMO	BELVE	3500	225	A	1	106	99	101	104	104
70	PLYMO	BELVE	3500	225	S3	1	6	6	6	6	6
70	PLYMO	BELVE	3500	225	S4	1	15	14	14	15	15
70	PLYMO	BELVE	3500	318	A	2	909	852	873	895	894
70	PLYMO	BELVE	3500	318	S3	2	55	52	53	55	55
70	PLYMO	BELVE	3500	318	S4	2	131	123	126	129	129
70	PLYMO	BELVE	3500	383	A	4	112	105	108	111	110
70	PLYMO	BELVE	3500	383	S3	4	6	6	6	6	6
70	PLYMO	BELVE	3500	383	S4	4	16	15	15	16	16
70	PLYMO	FURY	4000	225	A	1	113	105	108	111	111
70	PLYMO	FURY	4000	225	S3	1	0	0	0	0	0
70	PLYMO	FURY	4000	318	A	2	2124	1989	2040	2091	2086
70	PLYMO	FURY	4000	318	S3	2	17	16	16	16	16
70	PLYMO	FURY	4000	440	A	4	22	21	21	22	22
70	PLYMO	FURY	4000	440	S3	4	0	0	0	0	0
70	PLYMO	BARRA	3500	225	A	1	40	38	38	39	39
70	PLYMO	BARRA	3500	225	S3	1	3	3	3	3	3
70	PLYMO	BARRA	3500	225	S4	1	11	10	11	11	11
70	PLYMO	BARRA	3500	383	A	2	300	281	288	295	295
70	PLYMO	BARRA	3500	383	S3	2	28	26	27	27	27
70	PLYMO	BARRA	3500	383	S4	2	86	80	82	85	84
70	PLYMO	STAWA	0	0	0	0	542	507	520	533	532
70	PONTI	TEMPE	3500	250	A	1	131	117	121	125	129
70	PONTI	TEMPE	3500	250	S3	1	6	5	6	6	6
70	PONTI	TEMPE	3500	250	S4	1	10	9	9	9	9
70	PONTI	TEMPE	4000	400	A	4	1299	1162	1199	1237	1275
70	PONTI	TEMPE	4000	400	S3	4	65	58	60	62	64
70	PONTI	TEMPE	4000	400	S4	4	99	89	91	94	97
70	PONTI	CATAL	4500	350	A	2	1687	1509	1558	1607	1656
70	PONTI	EXECU	4500	400	A	4	218	195	201	207	214
70	PONTI	BONNE	4500	455	A	4	671	600	620	639	659
70	PONTI	GRANP	4000	400	A	4	499	446	461	475	490

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	PONTI	FIREB	3500	250	A	1	18	16	17	18	18
70	PONTI	FIREB	3500	250	S3	1	1	1	1	1	1
70	PONTI	FIREB	3500	250	S4	1	2	2	2	2	2
70	PONTI	FIREB	3500	350	A	2	277	248	256	264	272
70	PONTI	FIREB	3500	350	S3	2	25	22	23	24	24
70	PONTI	FIREB	3500	350	S4	2	42	37	39	40	41
70	PONTI	STAWA	0	0	0	0	470	421	434	448	462
70	IMPOR	VOLKS	2250	0	0	0	8605	7856	8281	8705	9130
70	IMPOR	TOYOT	2500	0	0	0	2795	2552	2650	2828	2966
70	IMPOR	DATSU	2250	0	0	0	1520	1388	1463	1538	1613
70	IMPOR	OPEL	2250	0	0	0	1258	1148	1210	1273	1335
70	IMPOR	VOLVO	3000	0	0	0	675	616	650	683	716
70	IMPOR	OTHER	2250	0	0	0	3758	3430	3616	3802	3987

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CAME TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	AMMOT	AMERI	3000	199	A	1	571	681	703	726	748
69	AMMOT	AMERI	3000	199	S3	1	265	315	326	336	347
69	AMMOT	AMERI	3000	199	S4	1	18	22	23	24	24
69	AMMOT	AMERI	3000	290	A	2	28	34	35	36	37
69	AMMOT	AMERI	3000	290	S3	2	13	15	16	16	17
69	AMMOT	AMERI	3000	290	S4	2	0	1	1	1	1
69	AMMOT	REBEL	3500	232	A	1	204	243	251	259	267
69	AMMOT	REBEL	3500	232	S3	1	13	16	17	17	18
69	AMMOT	REBEL	3500	290	A	2	239	284	294	303	313
69	AMMOT	REBEL	3500	290	S3	2	16	19	19	20	21
69	AMMOT	AMBAS	3500	232	A	1	58	70	72	74	77
69	AMMOT	AMBAS	3500	232	S3	1	3	4	4	4	4
69	AMMOT	AMBAS	4000	290	A	2	617	735	759	784	808
69	AMMOT	AMBAS	4000	290	S3	2	36	43	45	46	47
69	AMMOT	JAVEL	3000	232	A	1	70	83	86	89	92
69	AMMOT	JAVEL	3000	232	S3	1	18	22	23	23	24
69	AMMOT	JAVEL	3000	232	S4	1	10	12	13	13	13
69	AMMOT	JAVEL	3500	290	A	2	215	256	265	273	282
69	AMMOT	JAVEL	3500	290	S3	2	57	68	70	73	75
69	AMMOT	JAVEL	3500	290	S4	2	32	39	40	41	42
69	AMMOT	AMX	3500	290	A	4	30	36	37	39	40
69	AMMOT	AMX	3500	290	S4	4	48	58	60	61	63
69	BUICK	SPECI	3500	250	A	1	54	48	50	51	51
69	BUICK	SPECI	3500	250	S3	1	1	1	1	1	1
69	BUICK	SPECI	3500	350	A	2	1257	1162	1203	1243	1239
69	BUICK	SPECI	3500	350	S3	2	35	32	33	34	34
69	BUICK	LESAB	4500	350	A	2	1363	1222	1264	1307	1302
69	BUICK	WILDC	4500	430	A	4	502	449	465	481	479
69	BUICK	ELECT	4500	430	A	4	991	888	919	951	947
69	BUICK	RIVIE	4500	430	A	4	390	349	362	374	373
69	BUICK	STAWA	0	0	0	0	266	238	247	255	254
69	CADIL	CALAI	5000	472	A	4	124	116	123	128	133
69	CADIL	DEVIL	5000	472	A	4	1222	1158	1209	1259	1310
69	CADIL	FLEET	5000	472	A	4	130	124	129	134	140
69	CADIL	ELDOR	5000	472	A	4	174	165	172	179	187
69	CHEVR	CORVA	2750	164	A	2	37	34	35	34	34
69	CHEVR	CORVA	2750	164	S3	2	7	6	6	6	6
69	CHEVR	CORVA	2750	164	S4	2	7	6	6	6	6
69	CHEVR	CHEV2	3000	153	A	1	38	35	36	36	35
69	CHEVR	CHEV2	3000	153	S3	1	14	13	13	13	13
69	CHEVR	CHEV2	3000	153	S4	1	3	2	2	2	2
69	CHEVR	CHEV2	3000	230	A	1	1018	933	957	952	939
69	CHEVR	CHEV2	3000	230	S3	1	383	351	360	358	353
69	CHEVR	CHEV2	3000	230	S4	1	83	76	78	77	76
69	CHEVR	CHEV2	3000	327	A	2	561	515	528	525	518

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	CHEVR	CHEV2	3000	327	S3	2	211	193	198	197	195
69	CHEVR	CHEV2	3000	327	S4	2	45	42	43	42	42
69	CHEVR	CHEVE	3500	230	A	1	328	301	308	307	303
69	CHEVR	CHEVE	3500	230	S3	1	40	37	38	37	37
69	CHEVR	CHEVE	3500	230	S4	1	49	45	46	46	46
69	CHEVR	CHEVE	3500	327	A	2	2685	2461	2523	2510	2477
69	CHEVR	CHEVE	3500	327	S3	2	332	304	312	310	306
69	CHEVR	CHEVE	3500	327	S4	2	407	373	383	380	376
69	CHEVR	BISCA	4000	250	A	1	29	27	27	27	27
69	CHEVR	BISCA	4000	250	S3	1	1	1	1	1	1
69	CHEVR	BISCA	4000	327	A	2	657	602	618	614	606
69	CHEVR	BISCA	4000	327	S3	2	27	25	25	25	25
69	CHEVR	BELAI	4000	250	A	1	44	40	41	41	40
69	CHEVR	BELAI	4000	250	S3	1	1	1	1	1	1
69	CHEVR	BELAI	4000	327	A	2	1247	1143	1172	1165	1150
69	CHEVR	BELAI	4000	327	S3	2	51	47	48	48	47
69	CHEVR	IMPAL	4000	250	A	1	213	195	200	199	197
69	CHEVR	IMPAL	4000	250	S3	1	8	8	8	8	8
69	CHEVR	IMPAL	4000	327	A	2	6012	5510	5651	5620	5547
69	CHEVR	IMPAL	4000	327	S3	2	250	229	235	234	231
69	CHEVR	CAPRI	4000	327	A	4	1055	967	992	986	973
69	CHEVR	CAPRI	4000	327	S3	4	21	19	20	20	19
69	CHEVR	CAMER	3500	230	A	1	183	168	172	171	169
69	CHEVR	CAMER	3500	230	S3	1	58	54	55	55	54
69	CHEVR	CAMER	3500	230	S4	1	76	69	71	71	70
69	CHEVR	CAMER	3500	327	A	2	1040	953	977	972	959
69	CHEVR	CAMER	3500	327	S3	2	334	306	314	312	308
69	CHEVR	CAMER	3500	327	S4	2	431	395	405	403	398
69	CHEVR	CORVE	3500	350	A	4	70	64	66	65	64
69	CHEVR	CORVE	3500	350	S3	4	3	2	2	2	2
69	CHEVR	CORVE	3500	350	S4	4	266	243	250	248	245
69	CHEVR	STAWA	0	0	0	0	1807	1656	1699	1689	1667
69	CHRYS	NEWPO	4500	383	A	2	1393	1230	1254	1279	1276
69	CHRYS	NEWPO	4500	383	S3	2	2	2	2	2	2
69	CHRYS	300	4500	440	A	4	319	282	287	293	292
69	CHRYS	NEWYO	4500	440	A	4	460	406	414	422	421
69	CHRYS	STAWA	0	0	0	0	226	199	203	207	207
69	DODGE	DART	3000	170	A	1	1234	1078	1112	1111	1108
69	DODGE	DART	3000	170	S3	1	124	108	112	111	111
69	DODGE	DART	3000	170	S4	1	103	90	93	93	93
69	DODGE	DART	3000	318	A	2	676	590	609	609	607
69	DODGE	DART	3000	318	S3	2	68	59	61	61	61
69	DODGE	DART	3000	318	S4	2	56	49	51	51	51
69	DODGE	CORON	3500	225	A	1	120	104	108	108	107
69	DODGE	CORON	3500	225	S3	1	5	4	4	4	4

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	DODGE	CORON	3500	225	S4	1	11	5	10	10	10
69	DODGE	CORON	3500	318	A	2	1668	1475	1522	1521	1516
69	DODGE	CORON	3500	318	S3	2	77	67	65	65	65
69	DODGE	CORON	3500	318	S4	2	155	139	144	143	143
69	DODGE	CORON	3500	440	A	4	67	58	60	60	60
69	DODGE	CORON	3500	440	S3	4	3	2	2	2	2
69	DODGE	CORON	3500	440	S4	4	6	5	5	5	5
69	DODGE	POLAR	4000	318	A	2	558	487	503	502	501
69	DODGE	POLAR	4000	318	S3	2	1	0	1	1	1
69	DODGE	MONAC	4000	318	A	2	155	139	143	143	143
69	DODGE	MONAC	4000	318	S3	2	0	0	0	0	0
69	DODGE	MONAC	4000	383	A	4	17	15	15	15	15
69	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
69	DODGE	CHARG	3500	225	A	1	4	3	3	3	3
69	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0
69	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
69	DODGE	CHARG	4000	440	A	4	843	738	760	760	757
69	DODGE	CHARG	4000	440	S3	4	10	8	9	9	9
69	DODGE	CHARG	4000	440	S4	4	82	71	74	74	74
69	DODGE	STAWA	0	0	0	0	621	542	566	559	558
69	FORD	FALCO	3000	170	A	1	192	185	191	189	184
69	FORD	FALCO	3000	170	S3	1	65	63	65	64	63
69	FORD	FALCO	3000	200	A	1	191	184	189	188	183
69	FORD	FALCO	3000	200	S3	1	65	63	65	64	62
69	FORD	FAIRL	3500	250	A	1	435	419	431	426	417
69	FORD	FAIRL	3500	250	S3	1	44	42	43	43	42
69	FORD	FAIRL	3500	250	S4	1	23	22	22	22	22
69	FORD	FAIRL	3500	302	A	2	2861	2758	2835	2807	2745
69	FORD	FAIRL	3500	302	S3	2	290	280	288	285	278
69	FORD	FAIRL	3500	302	S4	2	151	146	150	149	145
69	FORD	CUSTO	4000	240	A	1	22	21	22	22	21
69	FORD	CUSTO	4000	240	S3	1	0	0	0	0	0
69	FORD	CUSTO	4000	302	A	2	1177	1135	1167	1155	1130
69	FORD	CUSTO	4000	302	S3	2	24	23	23	23	23
69	FORD	GALAX	4000	240	A	1	84	81	83	83	81
69	FORD	GALAX	4000	240	S3	1	1	1	1	1	1
69	FORD	GALAX	4000	302	A	2	4374	4217	4334	4251	4157
69	FORD	GALAX	4000	302	S3	2	89	86	88	87	85
69	FORD	LTD	4000	302	A	2	1792	1727	1775	1758	1719
69	FORD	LTD	4000	302	A	2	36	35	36	35	35
69	FORD	MUSTA	3000	200	A	1	220	212	218	216	211
69	FORD	MUSTA	3000	200	S3	1	53	51	52	52	51
69	FORD	MUSTA	3000	200	S4	1	36	35	36	35	34
69	FORD	MUSTA	3500	250	A	1	185	178	183	182	178
69	FORD	MUSTA	3500	250	S3	1	44	43	44	44	43

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	FORD	MUSTA	3500	250	S4	1	30	29	30	29	29
69	FORD	MUSTA	3500	302	A	2	1546	1450	1531	1516	1483
69	FORD	MUSTA	3500	302	S3	2	373	360	370	366	358
69	FORD	MUSTA	3500	302	S4	2	254	245	252	249	244
69	FORD	MUSTA	3500	351	A	2	256	247	253	251	245
69	FORD	MUSTA	3500	351	S3	2	61	59	61	60	59
69	FORD	MUSTA	3500	351	S4	2	42	40	41	41	40
69	FORD	TBIRD	4500	429	A	4	507	485	502	497	486
69	FORD	STAWA	0	0	0	0	3500	3374	3468	3433	3358
69	IMPER	CROWN	5000	440	A	4	149	132	136	139	143
69	IMPER	LEBAR	5000	440	A	4	109	96	99	102	105
69	LINCO	CONTI	5500	460	A	4	481	478	498	519	511
69	LINCO	MARK3	5000	460	A	4	289	286	299	311	306
69	MERCU	MONTE	3500	250	A	1	196	178	181	184	175
69	MERCU	MONTE	3500	250	S3	1	12	11	11	11	11
69	MERCU	MONTE	3500	250	S4	1	3	3	3	3	3
69	MERCU	MONTE	3500	302	A	2	1304	1186	1205	1225	1190
69	MERCU	MONTE	3500	302	S3	2	81	74	75	76	74
69	MERCU	MONTE	3500	302	S4	2	25	23	23	23	23
69	MERCU	MONTR	4000	390	A	2	186	169	171	174	169
69	MERCU	MONTR	4000	390	S3	2	0	0	0	0	0
69	MERCU	MARQU	4500	390	A	2	186	169	171	174	169
69	MERCU	MARQU	4500	390	S3	2	0	0	0	0	0
69	MERCU	MARQU	4500	429	A	4	233	212	216	219	213
69	MERCU	COUGA	3500	351	A	2	1243	1130	1149	1167	1134
69	MERCU	COUGA	3500	351	S3	2	104	94	96	97	95
69	MERCU	COUGA	3500	351	S4	2	43	39	39	40	39
69	MERCU	STAWA	0	0	0	0	794	722	734	746	725
69	OLDSM	F-85	3500	250	A	1	52	48	50	52	51
69	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
69	OLDSM	F-85	3500	250	S4	1	2	2	2	2	2
69	OLDSM	F-85	3500	350	A	2	2149	1980	2050	2120	2105
69	OLDSM	F-85	3500	350	S3	2	39	36	37	38	38
69	OLDSM	F-85	3500	350	S4	2	112	103	107	111	110
69	OLDSM	DEL88	4000	350	A	2	1219	1119	1155	1198	1150
69	OLDSM	DEL88	4000	350	S3	2	1	1	1	1	1
69	OLDSM	DEL88	4000	455	A	4	974	897	928	960	953
69	OLDSM	DEL88	4000	455	S3	4	0	0	0	0	0
69	OLDSM	98	4500	455	A	4	983	905	937	969	962
69	OLDSM	TORON	4500	455	A	4	282	260	270	279	277
69	OLDSM	STAWA	0	0	0	0	458	422	437	452	448
69	PLYMO	VALIA	3000	170	A	1	855	805	825	824	820
69	PLYMO	VALIA	3000	170	S3	1	164	154	158	156	157
69	PLYMO	VALIA	3000	318	A	2	73	69	70	70	70
69	PLYMO	VALIA	3000	318	S3	2	14	13	13	13	13

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	PLYMO	BELVE	3500	225	A	1	140	132	135	135	134
69	PLYMO	BELVE	3500	225	S3	1	6	6	6	6	6
69	PLYMO	BELVE	3500	225	S4	1	38	36	37	37	37
69	PLYMO	BELVE	3500	318	A	2	1783	1679	1721	1719	1710
69	PLYMO	BELVE	3500	318	S3	2	84	79	81	81	81
69	PLYMO	BELVE	3500	318	S4	2	450	462	473	473	470
69	PLYMO	FURY	4000	225	A	1	47	44	46	45	45
69	PLYMO	FURY	4000	225	S3	1	0	0	0	0	0
69	PLYMO	FURY	4000	318	A	2	2601	2450	2512	2508	2494
69	PLYMO	FURY	4000	318	S3	2	34	32	33	33	32
69	PLYMO	BARRA	3000	225	A	1	61	58	59	59	59
69	PLYMO	BARRA	3000	225	S3	1	3	3	3	3	3
69	PLYMO	BARRA	3000	225	S4	1	8	7	8	8	8
69	PLYMO	BARRA	3500	318	A	2	215	202	207	207	206
69	PLYMO	BARRA	3500	318	S3	2	12	12	12	12	12
69	PLYMO	BARRA	3500	318	S4	2	29	27	28	28	28
69	PLYMO	STANA	0	0	0	0	732	685	706	705	702
69	PONTI	TEMPE	3500	250	A	1	237	219	226	233	229
69	PONTI	TEMPE	3500	250	S3	1	16	14	15	15	15
69	PONTI	TEMPE	3500	250	S4	1	29	27	28	28	28
69	PONTI	TEMPE	3500	400	A	4	1796	1655	1707	1759	1735
69	PONTI	TEMPE	3500	400	S3	4	122	112	115	119	117
69	PONTI	TEMPE	3500	400	S4	4	222	205	211	218	215
69	PONTI	CATAL	4500	400	A	4	2084	1920	1980	2041	2013
69	PONTI	CATAL	4500	400	S3	4	6	5	5	6	6
69	PONTI	EXECU	4500	400	A	4	269	248	256	263	260
69	PONTI	EXECU	4500	400	S3	4	0	0	0	0	0
69	PONTI	BONNE	4500	420	A	4	829	764	788	812	801
69	PONTI	BONNE	4500	420	S3	4	2	2	2	2	2
69	PONTI	GRANP	4000	400	A	4	439	405	417	430	424
69	PONTI	GRANP	4000	400	S3	4	1	1	1	1	1
69	PONTI	FIREB	3500	250	A	1	75	69	71	73	72
69	PONTI	FIREB	3500	250	S3	1	11	10	10	11	10
69	PONTI	FIREB	3500	250	S4	1	13	12	12	13	12
69	PONTI	FIREB	3500	400	A	4	481	443	457	471	465
69	PONTI	FIREB	3500	400	S3	4	72	67	69	71	70
69	PONTI	FIREB	3500	400	S4	4	85	78	80	83	82
69	PONTI	STANA	0	0	0	0	583	537	554	571	563
69	IMPOR	VOLKS	2250	0	0	0	5659	9289	9766	10242	10719
69	IMPOR	TOYOT	2500	0	0	0	2117	2027	2131	2235	2339
69	IMPOR	OPEL	2250	0	0	0	1644	1574	1655	1736	1817
69	IMPOR	DATSU	2250	0	0	0	1056	1012	1063	1115	1167
69	IMPOR	FIAT	2000	0	0	0	748	716	753	790	827
69	IMPOR	OTHER	2250	0	0	0	3876	3712	3903	4093	4284

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	AMMOT	AMERI	3000	199	A	1	504	425	439	453	433
68	AMMOT	AMERI	3000	199	S3	1	278	235	242	250	240
68	AMMOT	AMERI	3000	290	A	2	19	16	17	17	17
68	AMMOT	AMERI	3000	290	S3	2	11	9	9	9	9
68	AMMOT	REBEL	3500	232	A	1	261	221	228	235	226
68	AMMOT	REBEL	3500	232	S3	1	32	27	28	29	28
68	AMMOT	REBEL	3500	290	A	2	220	186	192	198	190
68	AMMOT	REBEL	3500	290	S3	2	27	23	23	24	23
68	AMMOT	AMBAS	3500	232	A	1	41	34	35	36	35
68	AMMOT	AMBAS	3500	232	S3	1	0	0	0	0	0
68	AMMOT	AMBAS	3500	290	A	2	479	405	418	430	414
68	AMMOT	AMBAS	3500	290	S3	2	10	9	9	9	9
68	AMMOT	JAVEL	3000	232	A	1	100	85	87	90	86
68	AMMOT	JAVEL	3000	232	S3	1	19	16	16	17	16
68	AMMOT	JAVEL	3000	232	S4	1	15	13	13	14	13
68	AMMOT	JAVEL	3000	290	A	2	219	185	191	197	190
68	AMMOT	JAVEL	3000	290	S3	2	42	35	36	37	36
68	AMMOT	JAVEL	3000	290	S4	2	34	29	29	30	29
68	AMMOT	AMX	3500	290	A	4	38	32	33	34	33
68	AMMOT	AMX	3500	290	S4	4	31	26	27	28	27
68	AMMOT	STAWA	0	0	0	0	381	322	332	343	329
68	BUICK	SPECI	3500	250	A	1	99	113	117	117	115
68	BUICK	SPECI	3500	250	S3	1	2	3	3	3	3
68	BUICK	SPECI	3500	250	S4	1	1	1	1	1	1
68	BUICK	SPECI	3500	350	A	2	1408	1608	1663	1656	1640
68	BUICK	SPECI	3500	350	S3	2	38	43	44	44	44
68	BUICK	SPECI	3500	350	S4	2	17	20	20	20	20
68	BUICK	LESAB	4000	350	A	2	1274	1456	1505	1499	1484
68	BUICK	LESAB	4000	350	S3	2	2	2	3	3	2
68	BUICK	WILDC	4500	430	A	4	471	538	556	554	548
68	BUICK	WILDC	4500	430	S3	4	0	0	0	0	0
68	BUICK	ELECT	4500	430	A	4	929	1061	1096	1092	1081
68	BUICK	RIVIE	4500	430	A	4	348	397	411	409	405
68	BUICK	STAWA	0	0	0	0	246	281	291	290	287
68	CADIL	CALAI	5000	472	A	4	138	151	157	164	162
68	CADIL	DEVIL	5000	472	A	4	1358	1486	1548	1610	1597
68	CADIL	FLEET	5000	472	A	4	146	160	167	174	172
68	CADIL	ELDOR	5000	472	A	4	241	265	276	287	284
68	CHEVR	CORVA	2750	164	A	2	90	96	95	94	92
68	CHEVR	CORVA	2750	164	S3	2	22	23	23	23	22
68	CHEVR	CORVA	2750	164	S4	2	16	17	17	17	17
68	CHEVR	CHEV2	3000	153	A	1	9	10	10	9	9
68	CHEVR	CHEV2	3000	153	S3	1	2	2	2	2	2
68	CHEVR	CHEV2	3000	153	S4	1	0	0	0	0	0
68	CHEVR	CHEV2	3000	230	A	1	978	1039	1033	1020	993

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	CHEVR	CHEV2	3000	230	S3	1	238	253	252	245	242
68	CHEVR	CHEV2	3000	230	S4	1	46	49	45	48	47
68	CHEVR	CHEV2	3000	307	A	2	365	352	350	384	374
68	CHEVR	CHEV2	3000	307	S3	2	90	95	95	94	91
68	CHEVR	CHEV2	3000	307	S4	2	17	18	18	18	17
68	CHEVR	CHEVE	3500	230	A	1	497	528	525	519	505
68	CHEVR	CHEVE	3500	230	S3	1	75	84	83	82	80
68	CHEVR	CHEVE	3500	230	S4	1	71	76	75	74	72
68	CHEVR	CHEVE	3500	307	A	2	1957	2079	2068	2041	1980
68	CHEVR	CHEVE	3500	307	S3	2	312	331	329	325	316
68	CHEVR	CHEVE	3500	307	S4	2	281	299	297	293	285
68	CHEVR	CHEVE	3500	396	A	4	341	362	360	355	346
68	CHEVR	CHEVE	3500	396	S3	4	54	57	57	56	55
68	CHEVR	CHEVE	3500	396	S4	4	49	52	51	51	49
68	CHEVR	BISCA	3500	250	A	1	48	51	51	50	49
68	CHEVR	BISCA	3500	250	S3	1	3	3	3	3	3
68	CHEVR	BISCA	4000	307	A	2	651	691	688	679	661
68	CHEVR	BISCA	4000	307	S3	2	48	51	51	50	49
68	CHEVR	BELAI	4000	250	A	1	91	96	96	95	92
68	CHEVR	BELAI	4000	250	S3	1	6	7	7	7	6
68	CHEVR	BELAI	4000	307	A	2	1230	1307	1299	1283	1248
68	CHEVR	BELAI	4000	307	S3	2	51	56	56	55	92
68	CHEVR	IMPAL	4000	250	A	1	440	467	465	459	447
68	CHEVR	IMPAL	4000	250	S3	1	32	34	34	34	33
68	CHEVR	IMPAL	4000	307	A	2	5941	6313	6278	6156	6031
68	CHEVR	IMPAL	4000	307	S3	2	440	467	465	455	447
68	CHEVR	CAPRI	4000	307	A	2	1108	1178	1171	1156	1125
68	CHEVR	CAPRI	4000	307	S3	2	22	24	23	23	22
68	CHEVR	CAMER	3500	230	A	1	258	275	273	270	262
68	CHEVR	CAMER	3500	230	S3	1	99	105	104	103	100
68	CHEVR	CAMER	3500	230	S4	1	90	96	95	94	92
68	CHEVR	CAMER	3500	307	A	2	934	992	987	974	948
68	CHEVR	CAMER	3500	307	S3	2	357	380	378	373	363
68	CHEVR	CAMER	3500	307	S4	2	327	347	345	341	332
68	CHEVR	CORVE	3500	327	A	4	50	54	53	53	51
68	CHEVR	CORVE	3500	327	S3	4	3	3	3	3	3
68	CHEVR	CORVE	3500	327	S4	4	233	247	246	243	236
68	CHEVR	STAWA	0	0	C	C	2272	2414	2401	2370	2307
68	CHRYS	NEWPO	4000	383	A	2	1489	1733	1767	1763	1752
68	CHRYS	NEWPO	4000	383	S3	2	4	5	5	5	5
68	CHRYS	300	4500	440	A	4	336	392	395	399	396
68	CHRYS	300	4500	440	S3	4	1	1	1	1	1
68	CHRYS	NEWYO	4500	440	A	4	490	571	582	581	577
68	CHRYS	STAWA	0	0	C	0	239	279	284	284	282
68	DODGE	DART	3000	170	A	1	545	505	504	501	493

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	DODGE	DART	3000	170	S3	1	113	108	108	108	107
68	DODGE	DART	3000	170	S4	1	23	22	22	22	22
68	DODGE	DART	3000	273	A	2	315	302	301	300	298
68	DODGE	DART	3000	273	S3	2	37	36	36	36	35
68	DODGE	DART	3000	273	S4	2	7	7	7	7	7
68	DODGE	DART	3500	340	A	4	53	51	51	51	50
68	DODGE	DART	3500	340	S3	4	6	6	6	6	6
68	DODGE	DART	3500	340	S4	4	1	1	1	1	1
68	DODGE	CORON	3500	225	A	1	183	175	175	175	173
68	DODGE	CORON	3500	225	S3	1	19	18	18	18	18
68	DODGE	CORON	3500	225	S4	1	6	6	6	6	6
68	DODGE	CORON	3500	273	A	2	1071	1025	1024	1021	1012
68	DODGE	CORON	3500	273	S3	2	113	108	108	108	107
68	DODGE	CORON	3500	273	S4	2	37	36	36	36	35
68	DODGE	CORON	3500	318	A	2	274	263	262	262	259
68	DODGE	CORON	3500	318	S3	2	29	27	27	27	27
68	DODGE	CORON	3500	318	S4	2	9	9	9	9	9
68	DODGE	POLAR	4000	318	A	2	934	894	893	891	883
68	DODGE	POLAR	4000	318	S3	2	9	9	9	9	8
68	DODGE	MONAC	4000	383	A	2	310	297	297	296	293
68	DODGE	MONAC	4000	383	S3	2	0	0	0	0	0
68	DODGE	CHARG	3500	318	A	2	629	602	601	599	594
68	DODGE	CHARG	3500	318	S3	2	16	15	15	15	15
68	DODGE	CHARG	3500	318	S4	2	50	47	47	47	47
68	DODGE	CHARG	3500	440	A	4	269	258	257	257	254
68	DODGE	CHARG	3500	440	S3	4	7	6	6	6	6
68	DODGE	CHARG	3500	440	S4	4	21	20	20	20	20
68	DODGE	STAWA	0	0	C	0	702	672	672	670	664
68	FORD	FALCO	3000	170	A	1	471	433	429	420	402
68	FORD	FALCO	3000	170	S3	1	213	196	194	190	182
68	FORD	FALCO	3000	289	A	2	155	143	141	138	132
68	FORD	FALCO	3000	289	S3	2	70	64	64	62	60
68	FORD	FAIRL	3500	200	A	1	286	264	261	255	245
68	FORD	FAIRL	3500	200	S3	1	34	32	31	31	29
68	FORD	FAIRL	3500	200	S4	1	14	12	12	12	12
68	FORD	FAIRL	3500	302	A	2	2458	2300	2277	2228	2133
68	FORD	FAIRL	3500	302	S3	2	364	280	277	271	259
68	FORD	FAIRL	3500	302	S4	2	122	113	112	109	104
68	FORD	CUSTO	4000	240	A	1	186	172	170	166	159
68	FORD	CUSTO	4000	240	S3	1	26	24	24	23	22
68	FORD	CUSTO	4000	302	A	2	711	655	648	634	607
68	FORD	CUSTO	4000	302	S3	2	100	92	91	89	86
68	FORD	GALAX	4000	240	A	1	33	30	30	29	28
68	FORD	GALAX	4000	240	S3	1	0	0	0	0	0
68	FORD	GALAX	4000	302	A	2	3676	3385	3351	3278	3139

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	FORD	GALAX	4000	302	S3	2	90	83	82	80	77
68	FORD	LTD	4000	302	A	2	1523	1402	1388	1358	1300
68	FORD	LTD	4000	302	S3	2	6	5	5	5	5
68	FORD	MUSTA	3000	200	A	1	609	560	555	543	520
68	FORD	MUSTA	3000	200	S3	1	191	176	175	171	163
68	FORD	MUSTA	3000	200	S4	1	48	44	44	43	41
68	FORD	MUSTA	3000	289	A	2	1469	1353	1339	1310	1255
68	FORD	MUSTA	3000	289	S3	2	463	426	422	413	395
68	FORD	MUSTA	3000	289	S4	2	116	107	106	104	99
68	FORD	TBIRD	4500	390	A	4	609	561	556	543	520
68	FORD	STAWA	0	0	0	0	2916	2686	2659	2601	2451
68	IMPER	CROWN	5000	440	A	4	134	140	144	148	145
68	IMPER	LEBAR	5000	440	A	4	93	98	101	104	101
68	LINCO	CONTI	5500	462	A	4	325	376	391	385	374
68	LINCO	MARK3	5000	462	A	4	105	122	127	125	122
68	MERCU	MONTE	3500	200	A	1	104	100	102	99	94
68	MERCU	MONTE	3500	200	S3	1	8	8	8	8	7
68	MERCU	MONTE	3500	200	S4	1	2	2	2	2	1
68	MERCU	MONTE	3500	302	A	2	1030	996	1012	983	933
68	MERCU	MONTE	3500	302	S3	2	85	82	83	81	77
68	MERCU	MONTE	3500	302	S4	2	21	20	21	20	19
68	MERCU	MONTR	4000	390	A	2	661	639	650	631	599
68	MERCU	MONTR	4000	390	S3	2	2	2	2	2	2
68	MERCU	MONTC	4000	390	A	2	162	157	159	155	147
68	MERCU	MONTC	4000	390	S3	2	0	0	0	0	0
68	MERCU	MARQU	4000	390	A	4	206	200	203	197	187
68	MERCU	COUGA	3500	302	A	2	1096	1060	1077	1046	993
68	MERCU	COUGA	3500	302	S3	2	132	128	130	126	120
68	MERCU	COUGA	3500	302	S4	2	34	32	33	32	30
68	MERCU	STAWA	0	0	0	0	707	684	655	675	641
68	OLDSM	F-85	3500	250	A	1	78	86	89	89	87
68	OLDSM	F-85	3500	250	S3	1	2	2	3	3	2
68	OLDSM	F-85	3500	250	S4	1	4	5	5	5	5
68	OLDSM	F-85	3500	350	A	1	165	182	186	187	183
68	OLDSM	F-85	3500	350	A	2	79	87	90	89	88
68	OLDSM	F-85	3500	350	S3	2	26	29	30	30	29
68	OLDSM	F-85	3500	350	S4	2	48	54	56	55	54
68	OLDSM	F-85	3500	400	A	4	313	346	358	356	349
68	OLDSM	F-85	3500	400	S3	4	10	11	12	12	11
68	OLDSM	F-85	3500	400	S4	4	19	21	22	22	21
68	OLDSM	DELMO	4000	350	A	2	994	1100	1138	1130	1109
68	OLDSM	DELMO	4000	350	S3	2	2	3	3	3	3
68	OLDSM	DELTA	4500	455	A	4	796	881	911	905	888
68	OLDSM	98	4500	455	A	4	804	890	920	914	897
68	OLDSM	TORON	4500	455	A	4	217	240	248	246	242

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	OLDSM	STAWA	0	0	0	0	378	418	432	429	421
68	PLYMO	VALIA	3000	170	A	1	644	626	625	621	613
68	PLYMO	VALIA	3000	170	S3	1	148	144	143	143	141
68	PLYMO	VALIA	3000	273	A	2	57	55	55	55	54
68	PLYMO	VALIA	3000	273	S3	2	13	12	12	12	12
68	PLYMO	BELVE	3500	225	A	1	193	187	187	186	183
68	PLYMO	BELVE	3500	225	S3	1	15	15	15	14	14
68	PLYMO	BELVE	3500	225	S4	1	30	29	29	29	28
68	PLYMO	BELVE	3500	273	A	2	1442	1402	1395	1392	1372
68	PLYMO	BELVE	3500	273	S3	2	116	112	112	112	110
68	PLYMO	BELVE	3500	273	S4	2	226	220	220	218	215
68	PLYMO	FURY	4000	225	A	1	75	73	72	72	71
68	PLYMO	FURY	4000	225	S3	1	2	2	2	2	2
68	PLYMO	FURY	4000	318	A	2	3055	2973	2968	2953	2911
68	PLYMO	FURY	4000	318	S3	2	97	95	94	94	93
68	PLYMO	VIP	4000	318	A	2	138	135	134	134	132
68	PLYMO	BARRA	3000	225	A	1	92	89	89	89	87
68	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	6
68	PLYMO	BARRA	3000	225	S4	1	10	9	9	9	9
68	PLYMO	BARRA	3000	318	A	2	234	228	227	226	223
68	PLYMO	BARRA	3000	318	S3	2	18	17	17	17	17
68	PLYMO	BARRA	3000	318	S4	2	25	24	24	24	24
68	PLYMO	BARRA	3500	340	A	4	8	8	8	8	7
68	PLYMO	BARRA	3500	340	S3	4	0	0	0	0	0
68	PLYMO	BARRA	3500	340	S4	4	0	0	0	0	0
68	PLYMO	STAWA	0	0	0	0	833	810	808	804	793
68	PONTI	TEMPE	3500	250	A	1	380	412	425	419	408
68	PONTI	TEMPE	3500	250	S3	1	32	35	36	35	34
68	PONTI	TEMPE	3500	250	S4	1	48	52	54	53	51
68	PONTI	TEMPE	3500	350	A	2	1586	2159	2225	2154	2135
68	PONTI	TEMPE	3500	350	S3	2	168	183	188	186	181
68	PONTI	TEMPE	3500	350	S4	2	252	274	283	279	271
68	PONTI	TEMPE	3500	400	A	4	116	126	130	128	125
68	PONTI	TEMPE	3500	400	S3	4	24	26	26	26	25
68	PONTI	TEMPE	3500	400	S4	4	14	16	16	16	15
68	PONTI	CATAL	4500	400	A	4	2191	2381	2453	2420	2354
68	PONTI	CATAL	4500	400	S3	4	15	16	17	17	16
68	PONTI	EXECU	4500	400	A	4	283	308	317	313	305
68	PONTI	EXECU	4500	400	S3	4	2	2	2	2	2
68	PONTI	BONNE	4500	400	A	4	875	951	980	966	940
68	PONTI	GRANP	4500	400	A	4	464	504	520	512	499
68	PONTI	FIREB	3500	250	A	1	104	114	117	115	112
68	PONTI	FIREB	3500	250	S3	1	20	22	23	22	22
68	PONTI	FIREB	3500	250	S4	1	25	27	28	28	27
68	PONTI	FIREB	3500	350	A	2	501	545	561	554	539

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	PONTI	FIREB	3500	350	S3	2	99	107	111	105	106
68	PONTI	FIREB	3500	350	S4	2	123	133	137	135	132
68	PONTI	STAWA	0	0	0	0	616	669	690	660	662

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	AMMOT	AMERI	3000	199	A	1	437	483	458	475	447
67	AMMOT	AMERI	3000	199	S3	1	257	284	293	282	263
67	AMMOT	AMERI	3000	199	S4	1	10	11	12	11	11
67	AMMOT	REBEL	3500	232	A	1	400	443	456	435	409
67	AMMOT	REBEL	3500	232	S3	1	48	53	55	53	49
67	AMMOT	REBEL	3500	232	S4	1	5	6	6	6	5
67	AMMOT	REBEL	3500	290	A	2	338	374	386	371	346
67	AMMOT	REBEL	3500	290	S3	2	40	45	46	44	41
67	AMMOT	REBEL	3500	290	S4	2	4	5	5	5	4
67	AMMOT	AMBAS	3500	232	A	1	106	117	121	116	108
67	AMMOT	AMBAS	3500	232	S3	1	4	4	4	4	4
67	AMMOT	AMBAS	3500	290	A	2	414	458	472	454	423
67	AMMOT	AMBAS	3500	290	S3	2	16	16	19	18	17
67	AMMOT	MARLI	3500	232	A	1	20	22	23	22	21
67	AMMOT	MARLI	3500	232	S3	1	0	0	0	0	0
67	AMMOT	MARLI	3500	232	S4	1	0	0	0	0	0
67	AMMOT	MARLI	3500	290	A	2	126	140	144	138	129
67	AMMOT	MARLI	3500	290	S3	2	2	2	3	2	2
67	AMMOT	MARLI	3500	290	S4	2	5	5	5	5	5
67	BUICK	SPECI	3500	225	A	1	123	135	134	133	130
67	BUICK	SPECI	3500	225	S3	1	4	5	5	5	5
67	BUICK	SPECI	3500	225	S4	1	1	2	2	2	2
67	BUICK	SPECI	3500	300	A	2	1056	1203	1199	1187	1159
67	BUICK	SPECI	3500	300	S3	2	42	46	46	46	45
67	BUICK	SPECI	3500	300	S4	2	17	19	18	18	18
67	BUICK	LESAB	4000	340	A	2	1140	1251	1247	1234	1205
67	BUICK	LESAB	4000	340	S3	2	1	1	1	1	1
67	BUICK	WILDC	4500	430	A	4	485	532	530	525	513
67	BUICK	WILDC	4500	430	S3	4	0	0	0	0	0
67	BUICK	ELECT	4500	430	A	4	825	906	902	893	872
67	BUICK	ELECT	4500	430	S3	4	0	0	0	0	0
67	BUICK	RIVIE	4500	430	A	4	321	353	351	348	340
67	BUICK	STAWA	0	0	0	0	214	235	234	232	225
67	CADIL	CALAI	5000	429	A	4	175	192	200	196	195
67	CADIL	DEVIL	5000	429	A	4	1218	1338	1352	1361	1362
67	CADIL	FLEET	5000	429	A	4	147	161	168	166	164
67	CADIL	ELDOR	5000	429	A	4	196	215	224	222	219
67	CHEVR	CORVA	2750	164	A	2	145	148	146	143	136
67	CHEVR	CORVA	2750	164	S3	2	38	37	37	36	34
67	CHEVR	CORVA	2750	164	S4	2	32	32	32	31	29
67	CHEVR	CHEV2	3000	153	A	1	34	34	33	32	31
67	CHEVR	CHEV2	3000	153	S3	1	12	12	12	12	11
67	CHEVR	CHEV2	3000	153	S4	1	2	2	2	2	2
67	CHEVR	CHEV2	3000	194	A	1	430	428	422	411	391
67	CHEVR	CHEV2	3000	194	S3	1	161	160	158	154	146

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	CHEVR	CHEV2	3000	194	S4	1	35	35	35	34	32
67	CHEVR	CHEV2	3000	283	A	2	150	149	147	143	136
67	CHEVR	CHEV2	3000	283	S3	2	56	55	55	53	51
67	CHEVR	CHEV2	3000	283	S4	2	12	12	12	11	11
67	CHEVR	CHEVE	3000	230	A	1	468	465	459	447	425
67	CHEVR	CHEVE	3000	230	S3	1	59	59	57	55	90
67	CHEVR	CHEVE	3000	230	S4	1	102	101	100	97	93
67	CHEVR	CHEVE	3500	283	A	2	1641	1632	1611	1568	1491
67	CHEVR	CHEVE	3500	283	S3	2	349	347	343	334	317
67	CHEVR	CHEVE	3500	283	S4	2	359	357	352	343	326
67	CHEVR	BISCA	3500	250	A	1	73	72	71	69	66
67	CHEVR	BISCA	3500	250	S3	1	8	8	7	7	7
67	CHEVR	BISCA	3500	250	S4	1	0	0	0	0	0
67	CHEVR	BISCA	4000	283	A	2	650	647	638	621	591
67	CHEVR	BISCA	4000	283	S3	2	71	71	70	68	65
67	CHEVR	BISCA	4000	283	S4	2	8	8	8	8	7
67	CHEVR	BELAI	4000	250	A	1	138	137	135	132	125
67	CHEVR	BELAI	4000	250	S3	1	15	15	14	14	13
67	CHEVR	BELAI	4000	250	S4	1	1	1	1	1	1
67	CHEVR	BELAI	4000	283	A	2	1230	1224	1208	1176	1118
67	CHEVR	BELAI	4000	283	S3	2	136	135	133	129	123
67	CHEVR	BELAI	4000	283	S4	2	16	16	16	15	15
67	CHEVR	IMPAL	4000	250	A	1	528	525	518	504	479
67	CHEVR	IMPAL	4000	250	S3	1	58	58	57	55	53
67	CHEVR	IMPAL	4000	250	S4	1	7	7	7	6	6
67	CHEVR	IMPAL	4000	283	A	2	4701	4675	4614	4491	4271
67	CHEVR	IMPAL	4000	283	S3	2	519	516	509	496	471
67	CHEVR	IMPAL	4000	283	S4	2	63	63	62	60	57
67	CHEVR	CAPRI	4000	283	A	2	997	992	979	953	906
67	CHEVR	CAPRI	4000	283	S3	2	110	109	108	105	100
67	CHEVR	CAPRI	4000	283	S4	2	13	13	13	12	12
67	CHEVR	CAMER	3000	230	A	1	268	266	263	256	243
67	CHEVR	CAMER	3000	230	S3	1	106	105	104	101	96
67	CHEVR	CAMER	3000	230	S4	1	102	102	100	98	93
67	CHEVR	CAMER	3500	327	A	2	739	735	726	706	672
67	CHEVR	CAMER	3500	327	S3	2	293	291	288	280	266
67	CHEVR	CAMER	3500	327	S4	2	283	281	277	270	257
67	CHEVR	CORVE	3500	327	A	4	21	21	21	20	19
67	CHEVR	CORVE	3500	327	S3	4	4	4	3	3	3
67	CHEVR	CORVE	3500	327	S4	4	187	186	184	179	170
67	CHEVR	STAWA	0	0	0	0	1859	1849	1825	1777	1689
67	CHRYS	NEWPO	4000	383	A	2	1505	1718	1714	1703	1676
67	CHRYS	NEWPO	4000	383	S3	2	4	5	5	5	5
67	CHRYS	300	4500	440	A	4	281	320	320	318	312
67	CHRYS	300	4500	440	S3	4	0	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID			
								72	73	74	75
67	CHRYS	NEWYO	4500	440	A	4	463	551	550	546	538
67	DODGE	DART	3000	170	A	1	722	721	719	713	696
67	DODGE	DART	3000	170	S3	1	146	146	146	144	141
67	DODGE	DART	3000	170	S4	1	14	14	14	13	13
67	DODGE	DART	3000	273	A	2	225	225	224	222	217
67	DODGE	DART	3000	273	S3	2	45	45	45	45	44
67	DODGE	DART	3000	273	S4	2	4	4	4	4	4
67	DODGE	CORON	3500	225	A	1	145	145	144	143	139
67	DODGE	CORON	3500	225	S3	1	9	9	9	9	9
67	DODGE	CORON	3500	225	S4	1	2	2	2	2	2
67	DODGE	CORON	3500	273	A	2	1096	1095	1092	1082	1056
67	DODGE	CORON	3500	273	S3	2	71	71	70	70	68
67	DODGE	CORON	3500	273	S4	2	20	20	20	19	19
67	DODGE	POLAR	4000	318	A	2	378	377	376	373	364
67	DODGE	POLAR	4000	318	S3	2	7	7	7	7	7
67	DODGE	POLAR	4000	318	S3	2	0	0	0	0	0
67	DODGE	POLAR	4000	383	A	2	252	251	251	248	243
67	DODGE	POLAR	4000	383	S3	2	5	5	5	5	4
67	DODGE	POLAR	4000	383	S4	2	0	0	0	0	0
67	DODGE	MONAC	4000	383	A	2	214	214	213	211	206
67	DODGE	MONAC	4000	383	A	4	71	71	71	70	68
67	DODGE	CHARG	4000	318	A	2	236	236	236	233	228
67	DODGE	CHARG	4000	318	S3	2	4	4	4	4	4
67	DODGE	CHARG	4000	318	S4	2	15	15	15	15	15
67	DODGE	STAWA	0	0	0	0	522	521	520	515	503
67	FORD	FALCO	3000	170	A	1	532	527	515	494	457
67	FORD	FALCO	3000	170	S3	1	243	241	236	226	209
67	FORD	FALCO	3000	289	A	2	180	178	174	167	155
67	FORD	FALCO	3000	289	S3	2	82	81	79	76	70
67	FORD	FAIRL	3000	200	A	1	258	255	249	239	221
67	FORD	FAIRL	3000	200	S3	1	43	43	42	40	37
67	FORD	FAIRL	3000	200	S4	1	14	14	13	13	12
67	FORD	FAIRL	3000	289	A	2	1417	1403	1372	1314	1218
67	FORD	FAIRL	3000	289	S3	2	241	239	233	223	207
67	FORD	FAIRL	3000	289	S4	2	78	77	76	73	67
67	FORD	CUSTO	3500	240	A	1	84	83	81	78	72
67	FORD	CUSTO	3500	240	S3	1	5	5	5	5	4
67	FORD	CUSTO	4000	289	A	2	1565	1549	1515	1451	1345
67	FORD	CUSTO	4000	289	S3	2	101	100	98	94	87
67	FORD	GALAX	4000	240	A	1	223	221	216	207	192
67	FORD	GALAX	4000	240	S3	1	14	14	14	13	12
67	FORD	GALAX	4000	289	A	2	4159	4117	4027	3857	3573
67	FORD	GALAX	4000	289	S3	2	270	267	261	250	232
67	FORD	LTD	4000	240	A	1	58	57	56	54	50
67	FORD	LTD	4000	240	S3	1	3	3	3	3	3

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	FORD	LTD	4000	289	A	2	1083	1073	1049	1005	931
67	FORD	LTD	4000	289	S3	2	70	69	68	65	60
67	FORD	MUSTA	3000	200	A	1	962	952	931	892	826
67	FORD	MUSTA	3000	200	S3	1	353	349	342	327	303
67	FORD	MUSTA	3000	200	S4	1	103	102	100	96	89
67	FORD	MUSTA	3000	289	A	2	2244	2222	2173	2081	1928
67	FORD	MUSTA	3000	289	S3	2	824	816	798	764	708
67	FORD	MUSTA	3000	289	S4	2	241	239	234	224	207
67	FORD	TBIRD	4500	390	A	4	727	720	704	674	625
67	FORD	STAWA	0	0	0	0	2723	2696	2637	2525	2340
67	IMPER	CROWN	5000	440	A	4	229	262	269	263	251
67	IMPER	LEBAR	5000	440	A	4	26	30	31	31	29
67	LINCO	CONTI	5500	462	A	4	524	564	555	539	514
67	MERCU	COMET	3500	200	A	1	235	280	272	258	237
67	MERCU	COMET	3500	200	S3	1	40	48	46	44	40
67	MERCU	COMET	3500	200	S4	1	9	11	11	10	9
67	MERCU	COMET	3500	289	A	2	486	579	562	534	490
67	MERCU	COMET	3500	289	S3	2	83	99	96	92	84
67	MERCU	COMET	3500	289	S4	2	20	23	23	22	20
67	MERCU	MONTR	4000	390	A	2	673	801	778	739	679
67	MERCU	MONTR	4000	390	S3	2	5	6	6	5	5
67	MERCU	MONTC	4000	390	A	2	269	320	311	295	271
67	MERCU	MONTC	4000	390	S3	2	2	2	2	2	2
67	MERCU	COUGA	3500	289	A	2	2081	2476	2406	2285	2099
67	MERCU	COUGA	3500	289	S3	2	16	19	19	18	16
67	MERCU	STAWA	0	0	0	0	431	514	499	474	435
67	OLDSM	F-85	3500	250	A	1	101	116	115	113	108
67	OLDSM	F-85	3500	250	S3	1	3	4	4	4	3
67	OLDSM	F-85	3500	250	S4	1	5	6	6	6	6
67	OLDSM	F-85	3500	330	A	2	1396	1604	1593	1563	1497
67	OLDSM	F-85	3500	330	S3	2	50	57	57	56	54
67	OLDSM	F-85	3500	330	S4	2	80	93	92	90	86
67	OLDSM	F-85	3500	330	A	4	174	200	199	195	187
67	OLDSM	F-85	3500	330	S3	4	6	7	7	7	6
67	OLDSM	F-85	3500	330	S4	4	10	11	11	11	10
67	OLDSM	F-85	3500	400	A	4	7	8	8	8	8
67	OLDSM	F-85	3500	400	S3	4	2	3	3	2	2
67	OLDSM	F-85	3500	400	S4	4	4	4	4	4	4
67	OLDSM	DELMO	4500	330	A	2	466	536	532	522	500
67	OLDSM	DELMO	4500	425	A	2	466	536	532	522	500
67	OLDSM	DELTA	4500	425	A	2	723	831	825	809	775
67	OLDSM	98	4500	425	A	2	687	789	784	769	736
67	OLDSM	TORON	4500	425	A	2	188	216	214	210	201
67	OLDSM	STAWA	0	0	0	0	332	382	379	372	356
67	PLYMO	VALIA	3000	170	A	1	536	536	533	525	508

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	PLYMO	VALIA	3000	170	S3	1	168	168	167	165	159
67	PLYMO	VALIA	3000	273	A	2	45	45	45	44	42
67	PLYMO	VALIA	3000	273	S3	2	14	14	14	13	13
67	PLYMO	BELVE	3500	225	A	1	257	257	255	251	281
67	PLYMO	BELVE	3500	225	S3	1	40	39	39	39	37
67	PLYMO	BELVE	3500	225	S4	1	36	36	36	35	34
67	PLYMO	BELVE	3500	273	A	2	731	730	726	718	652
67	PLYMO	BELVE	3500	273	S3	2	58	58	57	56	53
67	PLYMO	BELVE	3500	273	S4	2	89	89	88	87	84
67	PLYMO	BELVE	3500	440	A	4	15	15	15	15	14
67	PLYMO	BELVE	3500	440	S3	4	2	2	2	2	1
67	PLYMO	BELVE	3500	440	S4	4	1	1	1	1	1
67	PLYMO	FURY	4000	225	A	1	116	116	115	114	110
67	PLYMO	FURY	4000	225	S3	1	3	3	3	3	3
67	PLYMO	FURY	4000	318	A	2	2367	2363	2351	2318	2241
67	PLYMO	FURY	4000	318	S3	2	73	73	72	71	69
67	PLYMO	VIP	4000	318	A	2	168	168	167	165	160
67	PLYMO	BARRA	3000	225	A	1	137	136	136	134	129
67	PLYMO	BARRA	3000	225	S3	1	18	18	18	16	17
67	PLYMO	BARRA	3000	225	S4	1	16	16	16	16	15
67	PLYMO	BARRA	3000	273	A	2	343	343	341	336	325
67	PLYMO	BARRA	3000	273	S3	2	46	46	45	45	43
67	PLYMO	BARRA	3000	273	S4	2	41	41	41	41	39
67	PLYMO	STAWA	0	0	0	0	636	635	631	623	602

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	AMMOT	AMERI	3000	199	A	1	712	744	715	667	593
66	AMMOT	AMERI	3000	199	S3	1	219	229	220	205	183
66	AMMOT	AMERI	3000	199	S4	1	14	14	14	13	11
66	AMMOT	CLASS	3500	232	A	1	615	642	617	576	512
66	AMMOT	CLASS	3500	232	S3	1	169	198	190	177	158
66	AMMOT	CLASS	3500	232	S4	1	12	12	12	11	10
66	AMMOT	CLASS	3500	287	A	2	190	199	191	178	158
66	AMMOT	CLASS	3500	287	S3	2	58	61	59	55	49
66	AMMOT	CLASS	3500	287	S4	2	3	3	3	3	3
66	AMMOT	CLASS	3500	327	A	2	89	93	89	83	74
66	AMMOT	CLASS	3500	327	S3	2	27	28	27	25	23
66	AMMOT	CLASS	3500	327	S4	2	1	1	1	1	1
66	AMMOT	AMBAS	3500	232	A	1	397	414	398	371	330
66	AMMOT	AMBAS	3500	232	S3	1	122	127	122	114	102
66	AMMOT	AMBAS	3500	232	S4	1	7	8	7	7	6
66	AMMOT	AMBAS	3500	287	A	2	123	128	123	119	102
66	AMMOT	AMBAS	3500	287	S3	2	37	39	36	35	31
66	AMMOT	AMBAS	3500	287	S4	2	2	2	2	2	2
66	AMMOT	AMBAS	3500	327	A	2	57	60	58	54	48
66	AMMOT	AMBAS	3500	327	S3	2	17	18	17	16	14
66	AMMOT	AMBAS	3500	327	S4	2	1	1	1	1	0
66	BUICK	SPECI	3500	225	A	1	246	245	243	237	226
66	BUICK	SPECI	3500	225	S3	1	14	14	14	14	13
66	BUICK	SPECI	3500	225	S4	1	3	3	3	3	3
66	BUICK	SPECI	3500	300	A	2	698	693	686	670	638
66	BUICK	SPECI	3500	300	S3	2	41	40	40	39	37
66	BUICK	SPECI	3500	300	S4	2	10	10	10	10	9
66	BUICK	SPECI	3500	340	A	2	403	402	398	389	370
66	BUICK	SPECI	3500	340	S3	2	23	23	23	22	21
66	BUICK	SPECI	3500	340	S4	2	6	6	5	5	5
66	BUICK	LESAB	4000	340	A	2	850	847	838	819	780
66	BUICK	LESAB	4000	340	S3	2	1	1	1	1	1
66	BUICK	LESAB	4000	340	A	4	364	363	359	351	334
66	BUICK	LESAB	4000	340	S3	4	0	0	0	0	0
66	BUICK	WILDC	4500	401	A	4	174	173	172	168	160
66	BUICK	WILDC	4500	401	S3	4	0	0	0	0	0
66	BUICK	WILDC	4500	425	A	4	407	405	401	392	373
66	BUICK	WILDC	4500	425	S3	4	0	0	0	0	0
66	BUICK	ELECT	4500	401	A	4	379	377	374	365	347
66	BUICK	ELECT	4500	401	S3	4	0	0	0	0	0
66	BUICK	ELECT	4500	425	A	4	379	377	374	365	347
66	BUICK	ELECT	4500	425	S3	4	0	0	0	0	0
66	BUICK	RIVIE	4500	401	A	4	368	366	363	354	337
66	BUICK	RIVIE	4500	401	S3	4	0	0	0	0	0
66	BUICK	STAWA	0	0	0	0	287	286	283	277	263

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CADIL	CALAI	5000	429	A	4	238	236	234	230	225
66	CADIL	DEVIL	5000	429	A	4	1247	1235	1225	1208	1180
66	CADIL	FLEET	5000	429	A	4	174	173	171	169	165
66	CADIL	ELDOR	5000	429	A	4	71	70	70	69	67
66	CHEVR	CORVA	2750	164	A	2	342	337	328	312	286
66	CHEVR	CORVA	2750	164	S3	2	96	95	92	87	80
66	CHEVR	CORVA	2750	164	S4	2	159	157	153	145	133
66	CHEVR	CORVA	2750	164	A	4	146	144	140	133	122
66	CHEVR	CORVA	2750	164	S3	4	41	40	39	37	34
66	CHEVR	CORVA	2750	164	S4	4	68	67	65	62	57
66	CHEVR	CHEV2	2750	153	A	1	25	25	24	23	21
66	CHEVR	CHEV2	2750	153	S3	1	10	10	10	9	8
66	CHEVR	CHEV2	2750	153	S4	1	2	2	2	2	2
66	CHEVR	CHEV2	3000	194	A	1	289	286	278	264	242
66	CHEVR	CHEV2	3000	194	S3	1	120	119	116	110	101
66	CHEVR	CHEV2	3000	194	S4	1	27	26	26	24	22
66	CHEVR	CHEV2	3000	230	A	1	289	286	278	264	242
66	CHEVR	CHEV2	3000	230	S3	1	120	119	116	110	101
66	CHEVR	CHEV2	3000	230	S4	1	27	26	26	24	22
66	CHEVR	CHEV2	3000	283	A	2	136	134	131	124	114
66	CHEVR	CHEV2	3000	283	S3	2	56	56	54	52	47
66	CHEVR	CHEV2	3000	283	S4	2	12	12	12	11	10
66	CHEVR	CHEV2	3000	327	A	4	82	81	79	75	69
66	CHEVR	CHEV2	3000	327	S3	4	34	34	33	31	28
66	CHEVR	CHEV2	3000	327	S4	4	7	7	7	7	6
66	CHEVR	CHEVE	3500	194	A	1	380	375	365	347	318
66	CHEVR	CHEVE	3500	194	S3	1	100	98	96	91	83
66	CHEVR	CHEVE	3500	194	S4	1	101	99	97	92	84
66	CHEVR	CHEVE	3500	230	A	1	236	233	227	216	198
66	CHEVR	CHEVE	3500	230	S3	1	62	61	59	56	52
66	CHEVR	CHEVE	3500	230	S4	1	62	62	60	57	52
66	CHEVR	CHEVE	3500	283	A	2	1038	1024	997	948	869
66	CHEVR	CHEVE	3500	283	S3	2	273	269	262	249	228
66	CHEVR	CHEVE	3500	283	S4	2	276	272	265	252	231
66	CHEVR	CHEVE	3500	327	A	4	472	466	454	432	396
66	CHEVR	CHEVE	3500	327	S3	4	124	122	119	113	104
66	CHEVR	CHEVE	3500	327	S4	4	125	124	120	114	105
66	CHEVR	CHEVE	3500	396	A	4	236	233	227	216	198
66	CHEVR	CHEVE	3500	396	S3	4	62	61	59	56	52
66	CHEVR	CHEVE	3500	396	S4	4	62	62	60	57	52
66	CHEVR	BISCA	3500	250	A	1	130	128	124	118	108
66	CHEVR	BISCA	3500	250	S3	1	19	18	18	17	16
66	CHEVR	BISCA	3500	250	S4	1	3	3	3	2	2
66	CHEVR	BISCA	3500	283	A	2	435	429	418	397	364
66	CHEVR	BISCA	3500	283	S3	2	64	63	61	58	53

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CHEVR	BISCA	3500	283	S4	2	10	10	10	9	8
66	CHEVR	BISCA	3500	327	A	4	282	278	271	258	236
66	CHEVR	BISCA	3500	327	S3	4	41	41	40	38	34
66	CHEVR	BISCA	3500	327	S4	4	6	6	6	6	5
66	CHEVR	BISCA	3500	396	A	4	9	9	9	8	7
66	CHEVR	BISCA	3500	396	S3	4	1	1	1	1	1
66	CHEVR	BISCA	3500	396	S4	4	0	0	0	0	0
66	CHEVR	BELAI	3500	250	A	1	258	254	247	235	216
66	CHEVR	BELAI	3500	250	S3	1	38	37	36	34	31
66	CHEVR	BELAI	3500	250	S4	1	6	6	6	5	5
66	CHEVR	BELAI	4000	283	A	2	863	852	825	789	723
66	CHEVR	BELAI	4000	283	S3	2	127	125	122	116	106
66	CHEVR	BELAI	4000	283	S4	2	21	20	20	19	17
66	CHEVR	BELAI	4000	327	A	4	560	553	538	512	469
66	CHEVR	BELAI	4000	327	S3	4	82	81	75	75	69
66	CHEVR	BELAI	4000	327	S4	4	13	13	13	12	11
66	CHEVR	BELAI	4000	396	A	4	186	184	179	170	156
66	CHEVR	BELAI	4000	396	S3	4	27	27	26	25	23
66	CHEVR	BELAI	4000	396	S4	4	4	4	4	4	3
66	CHEVR	IMPAL	3500	250	A	1	855	844	821	781	716
66	CHEVR	IMPAL	3500	250	S3	1	126	124	121	115	105
66	CHEVR	IMPAL	3500	250	S4	1	21	20	20	19	17
66	CHEVR	IMPAL	3500	283	A	2	2863	2826	2750	2615	2398
66	CHEVR	IMPAL	3500	283	S3	2	422	417	406	386	354
66	CHEVR	IMPAL	3500	283	S4	2	70	69	67	64	59
66	CHEVR	IMPAL	3500	327	A	4	1859	1835	1786	1658	1557
66	CHEVR	IMPAL	3500	327	S3	4	274	271	263	250	230
66	CHEVR	IMPAL	3500	327	S4	4	45	45	43	41	38
66	CHEVR	IMPAL	3500	396	A	4	619	611	595	566	519
66	CHEVR	IMPAL	3500	396	S3	4	91	90	87	83	76
66	CHEVR	IMPAL	3500	396	S4	4	15	15	14	13	12
66	CHEVR	CAPRI	4000	283	A	2	379	374	364	346	318
66	CHEVR	CAPRI	4000	283	S3	2	56	55	53	51	46
66	CHEVR	CAPRI	4000	283	S4	2	9	9	8	8	7
66	CHEVR	CAPRI	4000	327	A	4	506	499	486	462	424
66	CHEVR	CAPRI	4000	327	S3	4	74	73	71	68	62
66	CHEVR	CAPRI	4000	327	S4	4	12	12	11	11	10
66	CHEVR	CAPRI	4000	396	A	4	253	249	243	231	212
66	CHEVR	CAPRI	4000	396	S3	4	37	36	35	34	31
66	CHEVR	CAPRI	4000	396	S4	4	6	6	5	5	5
66	CHEVR	CAPRI	4000	427	A	4	126	124	121	115	106
66	CHEVR	CAPRI	4000	427	S3	4	18	18	17	17	15
66	CHEVR	CAPRI	4000	427	S4	4	3	3	2	2	2
66	CHEVR	CAPER	3500	230	A	1	67	66	65	61	56
66	CHEVR	CAPER	3500	230	S3	1	17	17	17	16	14

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CHEVR	CAMER	3500	230	S4	1	18	17	17	16	15
66	CHEVR	CAMER	3500	283	A	2	191	189	184	175	160
66	CHEVR	CAMER	3500	283	S3	2	50	49	48	46	42
66	CHEVR	CAMER	3500	283	S4	2	51	50	49	46	42
66	CHEVR	CORVE	3500	327	A	4	16	16	15	14	13
66	CHEVR	CORVE	3500	327	S3	4	3	3	3	3	3
66	CHEVR	CORVE	3500	327	S4	4	166	164	159	152	139
66	CHEVR	CORVE	3500	427	A	4	4	4	3	3	3
66	CHEVR	CORVE	3500	427	S3	4	0	0	0	0	0
66	CHEVR	CORVE	3500	427	S4	4	41	41	39	38	34
66	CHEVR	STAWA	0	0	0	0	2278	2248	2188	2081	1908
66	CHRYS	NEWPO	4000	383	A	2	1764	1760	1749	1721	1658
66	CHRYS	NEWPO	4000	383	S3	2	7	7	7	6	6
66	CHRYS	300	4500	383	A	4	458	457	454	447	431
66	CHRYS	300	4500	383	S3	4	1	1	1	1	1
66	CHRYS	NEWYO	4500	440	A	4	564	563	559	550	530
66	CHRYS	NEWYO	4500	440	S3	4	2	2	2	2	2
66	CHRYS	STAWA	0	0	0	0	224	223	222	218	210
66	DODGE	DART	3000	170	A	1	570	566	563	550	520
66	DODGE	DART	3000	170	S3	1	128	128	127	124	117
66	DODGE	DART	3000	170	S4	1	11	11	11	10	10
66	DODGE	DART	3000	225	A	1	503	502	497	485	459
66	DODGE	DART	3000	225	S3	1	113	113	112	109	103
66	DODGE	DART	3000	225	S4	1	10	10	9	9	9
66	DODGE	DART	3000	273	A	2	185	184	182	178	168
66	DODGE	DART	3000	273	S3	2	41	41	41	40	38
66	DODGE	DART	3000	273	S4	2	3	3	3	3	3
66	DODGE	CORON	3500	225	A	1	353	352	349	341	322
66	DODGE	CORON	3500	225	S3	1	41	41	40	39	37
66	DODGE	CORON	3500	225	S4	1	10	10	10	9	9
66	DODGE	CORON	3500	273	A	1	573	572	567	553	523
66	DODGE	CORON	3500	273	S3	1	67	66	66	64	61
66	DODGE	CORON	3500	273	S4	1	16	16	16	15	14
66	DODGE	CORON	3500	318	A	2	516	515	510	498	470
66	DODGE	CORON	3500	318	S3	2	60	60	59	58	55
66	DODGE	CORON	3500	318	S4	2	14	14	14	14	13
66	DODGE	CORON	3500	361	A	2	277	276	274	267	252
66	DODGE	CORON	3500	361	S3	2	32	32	32	31	29
66	DODGE	CORON	3500	361	S4	2	7	7	7	7	7
66	DODGE	CORON	3500	383	A	2	133	133	132	129	122
66	DODGE	CORON	3500	383	S3	2	15	15	15	15	14
66	DODGE	CORON	3500	383	S4	2	3	3	3	3	3
66	DODGE	CORON	3500	426	A	4	57	57	56	55	52
66	DODGE	CORON	3500	426	S3	4	6	6	6	6	6
66	DODGE	CORON	3500	426	S4	4	1	1	1	1	1

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	DODGE	MONAC	4000	383	A	2	253	252	250	244	231
66	DODGE	MONAC	4000	383	S3	2	1	1	1	1	1
66	DODGE	MONAC	4000	383	A	4	126	126	125	122	115
66	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
66	DODGE	MONAC	4000	440	A	4	42	42	41	40	38
66	DODGE	MONAC	4000	440	S3	4	0	0	0	0	0
66	DODGE	CHARG	4000	318	A	2	242	241	239	233	220
66	DODGE	CHARG	4000	318	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	361	A	2	40	40	39	38	36
66	DODGE	CHARG	4000	361	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	383	A	2	100	100	99	97	91
66	DODGE	CHARG	4000	383	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	426	A	4	20	20	19	19	18
66	DODGE	CHARG	4000	426	S3	4	0	0	0	0	0
66	DODGE	STAWA	0	0	C	0	830	828	821	801	757
66	FORD	FALCO	3000	170	A	1	38	37	35	32	29
66	FORD	FALCO	3000	170	S3	1	32	31	30	27	24
66	FORD	FALCO	3000	200	A	1	36	35	34	31	27
66	FORD	FALCO	3000	200	S3	1	30	30	28	26	23
66	FORD	FALCO	3000	289	A	2	656	642	615	565	502
66	FORD	FALCO	3000	289	S3	2	547	535	512	475	418
66	FORD	FAIRL	3000	200	A	1	342	334	320	297	262
66	FORD	FAIRL	3000	200	S3	1	31	30	29	27	23
66	FORD	FAIRL	3000	200	S4	1	77	75	72	67	59
66	FORD	FAIRL	3500	289	A	2	859	840	804	745	657
66	FORD	FAIRL	3500	289	S3	2	78	76	73	67	59
66	FORD	FAIRL	3500	289	S4	2	194	190	182	168	148
66	FORD	FAIRL	3500	390	A	2	600	587	562	521	459
66	FORD	FAIRL	3500	390	S3	2	54	53	51	47	41
66	FORD	FAIRL	3500	390	S4	2	136	133	127	118	104
66	FORD	FAIRL	3500	390	A	4	200	195	187	173	153
66	FORD	FAIRL	3500	390	S3	4	18	17	17	15	13
66	FORD	FAIRL	3500	390	S4	4	45	44	42	39	34
66	FORD	CUSTO	3500	240	A	1	228	223	213	198	174
66	FORD	CUSTO	3500	240	S3	1	25	25	24	22	19
66	FORD	CUSTO	4000	289	A	2	1051	1028	985	912	804
66	FORD	CUSTO	4000	289	S3	2	118	115	110	102	90
66	FORD	CUSTO	4000	352	A	2	640	625	595	555	489
66	FORD	CUSTO	4000	352	S3	2	71	70	67	62	55
66	FORD	CUSTO	4000	390	A	2	170	166	159	148	130
66	FORD	CUSTO	4000	390	S3	2	19	18	17	16	14
66	FORD	CUSTO	4000	427	A	4	21	20	19	18	16
66	FORD	CUSTO	4000	427	S3	4	2	2	2	2	1
66	FORD	CUSTO	4000	428	A	4	21	20	19	18	16
66	FORD	CUSTO	4000	428	S3	4	2	2	2	2	1

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	FORD	GALAX	4000	240	A	1	477	466	447	414	365
66	FORD	GALAX	4000	240	S3	1	53	52	50	46	41
66	FORD	GALAX	4000	289	A	2	2199	2151	2060	1908	1682
66	FORD	GALAX	4000	289	S3	2	247	241	231	214	189
66	FORD	GALAX	4000	352	A	2	1338	1309	1253	1161	1024
66	FORD	GALAX	4000	352	S3	2	150	147	140	130	115
66	FORD	GALAX	4000	390	A	2	356	349	334	309	273
66	FORD	GALAX	4000	390	S3	2	40	39	37	34	30
66	FORD	GALAX	4000	427	A	4	44	43	41	38	34
66	FORD	GALAX	4000	427	S3	4	5	4	4	4	3
66	FORD	GALAX	4000	428	A	4	44	43	41	38	34
66	FORD	GALAX	4000	428	S3	4	5	4	4	4	3
66	FORD	LTD	4000	240	A	1	104	101	97	90	79
66	FORD	LTD	4000	240	S3	1	11	11	10	10	8
66	FORD	LTD	4000	289	A	2	480	469	449	416	367
66	FORD	LTD	4000	289	S3	2	53	52	50	46	41
66	FORD	LTD	4000	352	A	2	292	285	273	253	223
66	FORD	LTD	4000	352	S3	2	32	32	30	28	25
66	FORD	LTD	4000	390	A	2	77	76	72	67	59
66	FORD	LTD	4000	390	S3	2	8	8	8	7	6
66	FORD	LTD	4000	427	A	4	9	9	9	8	7
66	FORD	LTD	4000	427	S3	4	1	1	1	0	0
66	FORD	LTD	4000	428	A	4	9	9	9	8	7
66	FORD	LTD	4000	428	S3	4	1	1	1	0	0
66	FORD	MUSTA	3500	200	A	1	1549	1515	1451	1344	1185
66	FORD	MUSTA	3500	200	S3	1	742	726	695	644	568
66	FORD	MUSTA	3500	200	S4	1	175	171	164	152	134
66	FORD	MUSTA	3500	289	A	2	2166	2119	2029	1880	1657
66	FORD	MUSTA	3500	289	S3	2	1038	1015	972	901	794
66	FORD	MUSTA	3500	289	S4	2	244	239	229	212	187
66	FORD	TBIRD	4500	390	A	4	655	641	614	569	501
66	FORD	TBIRD	4500	428	A	4	72	71	68	63	55
66	FORD	STAWA	0	0	0	4	2904	2841	2721	2520	2222
66	IMPER	CROWN	5500	440	A	4	167	162	158	151	139
66	IMPER	LEBAR	5500	440	A	4	22	21	21	20	18
66	LINCO	CONTI	5500	462	A	4	573	565	549	522	483
66	MERCU	COMET	3500	200	A	1	419	407	386	355	311
66	MERCU	COMET	3500	200	S3	1	117	113	107	99	87
66	MERCU	COMET	3500	200	S4	1	45	44	42	38	34
66	MERCU	COMET	3500	289	A	2	389	378	355	329	289
66	MERCU	COMET	3500	289	S3	2	108	105	100	92	80
66	MERCU	COMET	3500	289	S3	2	42	41	39	36	31
66	MERCU	COMET	3500	390	A	4	346	336	315	293	257
66	MERCU	COMET	3500	390	S3	4	96	93	89	81	71
66	MERCU	COMET	3500	390	S4	4	36	36	35	32	28

YR	MAKE	MODEL	WEIGHT	ENG.	TRANS	CARB	REGISTERED	PROJECTED-MID			
				DISP	TYPE	TYPE	JULY 1971	72	73	74	75
66	MERCU	MONTR	4500	390	A	4	764	742	705	648	568
66	MERCU	MONTR	4500	390	S3	4	14	13	12	11	10
66	MERCU	MONTC	4500	390	A	4	433	421	400	367	322
66	MERCU	MONTC	4500	390	S3	4	7	7	7	6	5
66	MERCU	STAWA	0	0	0	0	846	824	782	719	631
66	OLDSM	F-85	3500	250	A	1	128	127	125	119	109
66	OLDSM	F-85	3500	250	S3	1	6	6	6	5	5
66	OLDSM	F-85	3500	250	S4	1	9	9	9	9	8
66	OLDSM	F-85	3500	330	A	2	1040	1032	1013	970	886
66	OLDSM	F-85	3500	330	S3	2	51	51	50	48	43
66	OLDSM	F-85	3500	330	S4	2	78	77	76	73	66
66	OLDSM	F-85	3500	400	A	4	500	497	488	467	427
66	OLDSM	F-85	3500	400	S3	4	24	24	24	23	21
66	OLDSM	F-85	3500	400	S4	4	37	37	36	35	32
66	OLDSM	JETST	4000	330	A	2	172	171	168	161	147
66	OLDSM	JETST	4000	330	S3	2	0	0	0	0	0
66	OLDSM	JETST	4000	330	A	4	74	73	72	69	63
66	OLDSM	JETST	4000	330	S3	4	0	0	0	0	0
66	OLDSM	DYNAM	4500	425	A	4	740	735	721	690	631
66	OLDSM	DYNAM	4500	425	S3	4	2	2	2	2	1
66	OLDSM	DELTA	4500	425	A	4	1047	1039	1020	976	892
66	OLDSM	DELTA	4500	425	S3	4	3	3	3	2	2
66	OLDSM	STARF	4500	425	A	4	76	76	74	71	65
66	OLDSM	STARF	4500	425	S3	4	0	0	0	0	0
66	OLDSM	98	4500	425	A	4	836	830	815	780	713
66	OLDSM	TORON	4500	425	A	4	315	313	307	294	265
66	OLDSM	STAWA	0	0	0	0	358	356	349	334	305
66	PLYMO	VALIA	3000	170	A	1	435	433	427	413	384
66	PLYMO	VALIA	3000	170	S3	1	159	158	156	151	140
66	PLYMO	VALIA	3000	225	A	1	340	338	333	322	300
66	PLYMO	VALIA	3000	225	S3	1	124	123	122	118	109
66	PLYMO	VALIA	3000	273	A	2	74	74	73	70	66
66	PLYMO	VALIA	3000	273	S3	2	27	27	26	25	24
66	PLYMO	BELVE	3500	225	A	1	335	333	329	318	296
66	PLYMO	BELVE	3500	225	S3	1	59	59	58	56	52
66	PLYMO	BELVE	3500	225	S4	1	19	19	19	18	17
66	PLYMO	BELVE	3500	318	A	2	460	458	451	436	406
66	PLYMO	BELVE	3500	318	S3	2	81	81	79	77	71
66	PLYMO	BELVE	3500	318	S4	2	27	27	26	25	24
66	PLYMO	BELVE	3500	361	A	2	263	261	258	249	232
66	PLYMO	BELVE	3500	361	S3	2	46	46	45	44	41
66	PLYMO	BELVE	3500	361	S4	2	15	15	15	14	13
66	PLYMO	BELVE	3500	383	A	2	131	130	129	124	116
66	PLYMO	BELVE	3500	383	S3	2	23	23	22	22	20
66	PLYMO	BELVE	3500	383	S4	2	7	7	7	7	6

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	PLYMO	BELVE	3500	426	A	4	125	124	122	118	110
66	PLYMO	BELVE	3500	426	S3	4	22	21	21	20	19
66	PLYMO	BELVE	3500	426	S4	4	7	7	7	7	6
66	PLYMO	FURY	4000	225	A	1	166	165	163	158	147
66	PLYMO	FURY	4000	225	S3	1	12	12	12	12	11
66	PLYMO	FURY	4000	225	S4	1	2	2	2	2	2
66	PLYMO	FURY	4000	318	A	2	1191	1185	1168	1129	1051
66	PLYMO	FURY	4000	318	S3	2	91	90	89	86	80
66	PLYMO	FURY	4000	318	S4	2	20	20	20	19	18
66	PLYMO	FURY	4000	383	A	4	714	711	701	677	631
66	PLYMO	FURY	4000	383	S3	4	54	54	53	51	48
66	PLYMO	FURY	4000	383	S4	4	12	12	12	11	11
66	PLYMO	FURY	4000	440	A	4	309	308	303	293	273
66	PLYMO	FURY	4000	440	S3	4	23	23	23	22	20
66	PLYMO	FURY	4000	440	S4	4	5	5	5	5	4
66	PLYMO	VIP	4000	318	A	2	14	14	14	13	12
66	PLYMO	VIP	4000	383	A	4	115	114	112	109	101
66	PLYMO	VIP	4000	440	A	4	57	57	56	54	50
66	PLYMO	BARRA	3000	170	A	1	24	23	23	22	21
66	PLYMO	BARRA	3000	170	S3	1	3	3	3	3	3
66	PLYMO	BARRA	3000	170	S4	1	4	4	4	4	4
66	PLYMO	BARRA	3000	225	A	1	45	45	45	43	40
66	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	5
66	PLYMO	BARRA	3000	225	S4	1	9	9	9	8	8
66	PLYMO	BARRA	3500	273	A	2	170	169	167	161	150
66	PLYMO	BARRA	3500	273	S3	2	24	24	24	23	21
66	PLYMO	BARRA	3500	273	S4	2	34	33	33	32	30
66	PLYMO	STAWA	0	0	C	0	798	794	783	757	704
66	PONTI	TEMPE	3500	230	A	1	565	558	543	517	476
66	PONTI	TEMPE	3500	230	S3	1	96	95	92	88	81
66	PONTI	TEMPE	3500	230	S4	1	148	146	142	135	124
66	PONTI	TEMPE	3500	326	A	2	1670	1647	1603	1526	1406
66	PONTI	TEMPE	3500	326	S3	2	284	280	273	260	239
66	PONTI	TEMPE	3500	326	S4	2	438	432	420	400	368
66	PONTI	CATAL	4000	389	A	2	1902	1876	1825	1738	1601
66	PONTI	CATAL	4000	389	S3	2	21	21	20	19	17
66	PONTI	STARC	4500	389	A	2	394	389	379	360	332
66	PONTI	STARC	4500	389	S3	2	7	7	7	6	6
66	PONTI	BONNE	4500	389	A	4	1096	1081	1052	1001	922
66	PONTI	BONNE	4500	389	S3	4	21	20	20	19	17
66	PONTI	GRANP	4500	389	A	4	354	349	340	324	298
66	PONTI	GRANP	4500	389	S3	4	6	6	6	6	5
66	PONTI	STAWA	0	0	0	C	345	340	331	315	290

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	AMMOT	AMERI	3000	196	A	1	365	351	327	291	242
65	AMMOT	AMERI	3000	196	S3	1	155	145	135	123	102
65	AMMOT	AMERI	3000	232	A	2	243	234	218	194	161
65	AMMOT	AMERI	3000	232	S3	2	103	99	92	82	68
65	AMMOT	CLASS	3000	199	A	1	396	380	355	315	262
65	AMMOT	CLASS	3000	199	S3	1	168	161	150	134	111
65	AMMOT	CLASS	3000	232	A	2	280	269	251	223	185
65	AMMOT	CLASS	3000	232	S3	2	118	114	106	94	78
65	AMMOT	CLASS	3000	287	A	2	164	158	147	131	109
65	AMMOT	CLASS	3000	287	S3	2	69	67	62	55	46
65	AMMOT	CLASS	3000	327	A	4	93	89	83	74	61
65	AMMOT	CLASS	3000	327	S3	4	39	38	35	31	26
65	AMMOT	AMBAS	3500	232	A	2	261	251	234	208	173
65	AMMOT	AMBAS	3500	232	S3	2	110	106	99	88	73
65	AMMOT	AMBAS	3500	287	A	2	63	61	56	50	42
65	AMMOT	AMBAS	3500	287	S3	2	26	25	24	21	17
65	AMMOT	AMBAS	3500	327	A	4	36	34	32	28	23
65	AMMOT	AMBAS	3500	327	S3	4	15	14	13	12	10
65	AMMOT	MARLI	3500	327	A	4	21	20	19	16	14
65	AMMOT	MARLI	3500	327	S3	4	9	8	8	7	5
65	AMMOT	STAWA	0	0	C	0	766	736	687	611	508
65	BUICK	SPECI	3500	225	A	1	315	312	305	290	264
65	BUICK	SPECI	3500	225	S3	1	32	32	31	29	27
65	BUICK	SPECI	3500	300	A	2	941	932	910	866	788
65	BUICK	SPECI	3500	300	S3	2	96	95	93	88	80
65	BUICK	LESAB	3500	300	A	2	1147	1136	1110	1057	961
65	BUICK	LESAB	3500	300	S3	2	5	5	5	5	4
65	BUICK	WILDC	4500	401	A	4	556	550	538	512	466
65	BUICK	WILDC	4500	401	S3	4	2	2	2	2	2
65	BUICK	WILDC	4500	425	A	4	185	183	179	170	155
65	BUICK	WILDC	4500	425	S3	4	0	0	0	0	0
65	BUICK	ELECT	4500	401	A	4	514	509	497	473	431
65	BUICK	ELECT	4500	401	S3	4	2	2	2	2	2
65	BUICK	ELECT	4500	425	A	4	171	169	165	157	143
65	BUICK	ELECT	4500	425	S3	4	0	0	0	0	0
65	BUICK	RIVIE	4500	401	A	4	215	213	208	198	180
65	BUICK	RIVIE	4500	401	S3	4	1	1	1	0	0
65	BUICK	RIVIE	4500	425	A	4	71	71	69	66	60
65	BUICK	RIVIE	4500	425	S3	4	0	0	0	0	0
65	BUICK	STAWA	0	0	C	0	327	334	326	310	282
65	CADIL	CALAI	5000	429	A	4	291	288	284	278	268
65	CADIL	DEVIL	5000	429	A	4	1140	1131	1115	1069	1049
65	CADIL	FLEET	5000	429	A	4	210	208	205	200	193
65	CHEVR	CORVA	2750	164	A	2	1180	1149	1093	1002	870
65	CHEVR	CORVA	2750	164	S3	2	295	287	273	251	218

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	CHEVR	CORVA	2750	164	S4	2	747	727	691	634	550
65	CHEVR	CORVA	2750	164	A	4	393	383	364	334	290
65	CHEVR	CORVA	2750	164	S3	4	98	95	91	83	72
65	CHEVR	CORVA	2750	164	S4	4	249	242	230	211	183
65	CHEVR	CHEV2	3000	194	A	1	486	473	450	413	358
65	CHEVR	CHEV2	3000	194	S3	1	229	223	212	194	169
65	CHEVR	CHEV2	3000	194	S4	1	11	11	10	9	8
65	CHEVR	CHEV2	3000	230	A	1	419	408	388	356	309
65	CHEVR	CHEV2	3000	230	S3	1	197	192	182	167	145
65	CHEVR	CHEV2	3000	230	S4	1	10	9	9	8	7
65	CHEVR	CHEV2	3000	327	A	4	142	138	132	121	105
65	CHEVR	CHEV2	3000	327	S3	4	67	65	62	57	49
65	CHEVR	CHEV2	3000	327	S4	4	3	3	3	2	2
65	CHEVR	CHEVE	3000	194	A	1	594	578	550	504	438
65	CHEVR	CHEVE	3000	194	S3	1	197	192	183	167	145
65	CHEVR	CHEVE	3000	194	S4	1	90	88	84	77	67
65	CHEVR	CHEVE	3000	230	A	1	534	520	495	453	394
65	CHEVR	CHEVE	3000	230	S3	1	178	173	164	151	131
65	CHEVR	CHEVE	3000	230	S4	1	81	79	75	69	60
65	CHEVR	CHEVE	3000	283	A	2	1247	1214	1155	1059	920
65	CHEVR	CHEVE	3000	283	S3	2	415	404	384	352	306
65	CHEVR	CHEVE	3000	283	S4	2	190	185	176	162	140
65	CHEVR	CHEVE	3000	327	A	4	594	578	550	504	436
65	CHEVR	CHEVE	3000	327	S3	4	197	192	183	167	145
65	CHEVR	CHEVE	3000	327	S4	4	90	88	84	77	67
65	CHEVR	BISCA	3500	230	A	1	308	300	285	261	227
65	CHEVR	BISCA	3500	230	S3	1	55	53	51	46	40
65	CHEVR	BISCA	3500	230	S4	1	14	13	13	12	10
65	CHEVR	BISCA	3500	283	A	2	525	511	486	445	387
65	CHEVR	BISCA	3500	283	S3	2	93	91	86	79	69
65	CHEVR	BISCA	3500	283	S4	2	24	23	22	20	18
65	CHEVR	BISCA	3500	327	A	4	500	486	462	424	368
65	CHEVR	BISCA	3500	327	S3	4	89	87	82	75	65
65	CHEVR	BISCA	3500	327	S4	4	23	22	21	19	17
65	CHEVR	BISCA	3500	396	A	4	250	243	231	212	184
65	CHEVR	BISCA	3500	396	S3	4	44	43	41	37	32
65	CHEVR	BISCA	3500	396	S4	4	11	11	10	9	8
65	CHEVR	BISCA	3500	409	A	4	83	81	77	70	61
65	CHEVR	BISCA	3500	409	S3	4	14	14	13	12	10
65	CHEVR	BISCA	3500	409	S4	4	3	3	3	3	2
65	CHEVR	BELAI	3500	230	A	1	588	573	545	499	434
65	CHEVR	BELAI	3500	230	S3	1	105	102	97	89	77
65	CHEVR	BELAI	3500	230	S4	1	27	26	25	23	20
65	CHEVR	BELAI	4000	283	A	2	1002	976	928	851	739
65	CHEVR	BELAI	4000	283	S3	2	179	174	166	152	132

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	CHEVR	BELAI	4000	283	S4	2	46	45	43	39	34
65	CHEVR	BELAI	4000	327	A	4	954	929	883	810	704
65	CHEVR	BELAI	4000	327	S3	4	170	166	158	145	125
65	CHEVR	BELAI	4000	327	S4	4	44	43	41	37	32
65	CHEVR	BELAI	4000	396	A	4	477	464	441	405	352
65	CHEVR	BELAI	4000	396	S3	4	85	83	79	72	62
65	CHEVR	BELAI	4000	396	S4	4	22	21	20	18	16
65	CHEVR	BELAI	4000	409	A	4	159	154	147	135	117
65	CHEVR	BELAI	4000	409	S3	4	28	27	26	24	20
65	CHEVR	BELAI	4000	409	S4	4	7	7	6	6	5
65	CHEVR	IMPAL	3500	230	A	1	228	222	211	194	168
65	CHEVR	IMPAL	3500	230	S3	1	40	39	37	34	30
65	CHEVR	IMPAL	3500	230	S4	1	10	10	9	9	7
65	CHEVR	IMPAL	4000	283	A	2	389	379	360	330	287
65	CHEVR	IMPAL	4000	283	S3	2	69	67	64	59	51
65	CHEVR	IMPAL	4000	283	S4	2	18	17	16	15	13
65	CHEVR	IMPAL	4000	327	A	4	371	361	343	314	273
65	CHEVR	IMPAL	4000	327	S3	4	66	64	61	56	48
65	CHEVR	IMPAL	4000	327	S4	4	17	16	15	14	12
65	CHEVR	IMPAL	4000	396	A	4	185	180	171	157	136
65	CHEVR	IMPAL	4000	396	S3	4	33	32	30	28	24
65	CHEVR	IMPAL	4000	396	S4	4	8	8	7	7	6
65	CHEVR	IMPAL	4000	409	A	4	61	60	57	52	45
65	CHEVR	IMPAL	4000	409	S3	4	11	10	10	9	8
65	CHEVR	IMPAL	4000	409	S4	4	2	2	2	2	2
65	CHEVR	CAPRI	4000	396	A	4	537	523	497	456	396
65	CHEVR	CAPRI	4000	396	S3	4	121	118	112	102	89
65	CHEVR	CORVE	3500	327	A	4	195	190	181	166	144
65	CHEVR	CORVE	3500	327	S3	4	49	47	45	41	36
65	CHEVR	CORVE	3500	327	S4	4	123	120	114	105	91
65	CHEVR	STAWA	0	0	0	0	3703	3604	3427	3143	2730
65	CHRYS	NEWPO	4500	383	A	2	1165	1158	1140	1098	1016
65	CHRYS	NEWPO	4500	383	S3	2	8	8	8	7	7
65	CHRYS	300	4500	383	A	4	320	318	313	302	279
65	CHRYS	300	4500	383	S3	4	2	2	2	2	1
65	CHRYS	NEWYO	4500	413	A	4	485	482	475	457	423
65	CHRYS	NEWYO	4500	413	S3	4	3	3	3	3	2
65	CHRYS	STAWA	0	0	0	0	146	145	143	138	128
65	DODGE	DART	3000	170	A	1	485	480	469	443	393
65	DODGE	DART	3000	170	S3	1	146	145	142	134	119
65	DODGE	DART	3000	170	S4	1	20	20	20	19	16
65	DODGE	DART	3000	225	A	1	452	448	437	413	366
65	DODGE	DART	3000	225	S3	1	136	135	132	125	110
65	DODGE	DART	3000	225	S4	1	19	19	18	17	15
65	DODGE	DART	3000	273	A	2	193	191	187	176	156

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	DODGE	DART	3000	273	S3	2	58	58	56	53	47
65	DODGE	DART	3000	273	S4	2	8	8	8	7	6
65	DODGE	CORON	3000	225	A	1	361	358	350	330	293
65	DODGE	CORON	3000	225	S3	1	65	64	63	59	52
65	DODGE	CORON	3500	273	A	2	370	367	358	338	300
65	DODGE	CORON	3500	273	S3	2	66	66	64	61	54
65	DODGE	CORON	3500	318	A	2	439	435	425	401	356
65	DODGE	CORON	3500	318	S3	2	79	78	76	72	64
65	DODGE	CORON	3500	361	A	2	219	217	212	200	178
65	DODGE	CORON	3500	361	S3	2	39	39	38	36	32
65	DODGE	CORON	3500	383	A	4	73	72	70	66	59
65	DODGE	CORON	3500	383	S3	4	13	13	12	12	10
65	DODGE	POLAR	4000	383	A	2	364	361	352	333	295
65	DODGE	POLAR	4000	383	S3	2	7	6	6	6	5
65	DODGE	POLAR	4000	413	A	4	218	216	211	199	177
65	DODGE	POLAR	4000	413	S3	4	4	4	4	3	3
65	DODGE	POLAR	4000	426	A	4	145	144	140	133	118
65	DODGE	POLAR	4000	426	S3	4	2	2	2	2	2
65	DODGE	MONAC	4500	383	A	2	168	167	163	154	136
65	DODGE	MONAC	4500	383	S3	2	20	20	19	18	16
65	DODGE	MONAC	4500	413	A	4	101	100	98	92	82
65	DODGE	MONAC	4500	413	S3	4	1	1	1	1	1
65	DODGE	MONAC	4500	426	A	4	67	66	65	61	54
65	DODGE	MONAC	4500	426	S3	4	1	1	1	1	1
65	DODGE	STAWA	0	0	0	0	733	727	709	670	594
65	FORD	FALCO	2750	170	A	1	409	392	363	320	263
65	FORD	FALCO	2750	170	S3	1	285	273	253	223	183
65	FORD	FALCO	2750	170	S4	1	19	18	17	15	12
65	FORD	FALCO	3000	200	A	1	392	376	348	307	252
65	FORD	FALCO	3000	200	S3	1	274	262	243	214	176
65	FORD	FALCO	3000	200	S4	1	18	17	16	14	11
65	FORD	FALCO	3000	289	A	2	179	172	159	140	115
65	FORD	FALCO	3000	289	S3	2	125	120	111	98	80
65	FORD	FALCO	3000	289	S4	2	8	8	7	6	5
65	FORD	FAIRL	3000	200	A	1	477	457	424	373	307
65	FORD	FAIRL	3000	200	S3	1	176	169	156	138	113
65	FORD	FAIRL	3000	289	A	2	1094	1047	970	855	703
65	FORD	FAIRL	3000	289	S3	2	404	387	359	316	260
65	FORD	CUSTO	3500	240	A	1	291	279	258	227	187
65	FORD	CUSTO	3500	240	S3	1	40	28	35	31	26
65	FORD	CUSTO	4000	289	A	2	1174	1125	1042	919	755
65	FORD	CUSTO	4000	289	S3	2	163	156	144	127	104
65	FORD	CUSTO	4000	352	A	2	399	382	354	312	256
65	FORD	CUSTO	4000	352	S3	2	55	53	49	43	35
65	FORD	CUSTO	4000	390	A	4	352	337	312	275	226

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	FORD	CUSTO	4000	390	S3	4	48	46	43	38	31
65	FORD	CUSTO	4000	427	A	4	131	126	116	102	84
65	FORD	CUSTO	4000	427	S3	4	18	17	16	14	11
65	FORD	GALAX	3500	240	A	1	557	534	494	436	358
65	FORD	GALAX	3500	240	S3	1	77	74	68	60	49
65	FORD	GALAX	4000	289	A	2	2248	2153	1995	1759	1445
65	FORD	GALAX	4000	289	S3	2	212	299	277	244	200
65	FORD	GALAX	4000	352	A	2	764	732	678	598	491
65	FORD	GALAX	4000	352	S3	2	106	101	94	83	68
65	FORD	GALAX	4000	390	A	4	674	646	598	527	433
65	FORD	GALAX	4000	390	S3	4	93	89	83	73	60
65	FORD	GALAX	4000	427	A	4	251	241	223	197	161
65	FORD	GALAX	4000	427	S3	4	34	33	31	27	22
65	FORD	LTD	4000	240	A	1	117	112	104	91	75
65	FORD	LTD	4000	240	S3	1	16	15	14	12	10
65	FORD	LTD	4000	289	A	2	472	452	419	369	303
65	FORD	LTD	4000	289	S3	2	65	62	58	51	42
65	FORD	LTD	4000	352	A	2	160	153	142	125	103
65	FORD	LTD	4000	352	S3	2	22	21	19	17	14
65	FORD	LTD	4000	390	A	4	141	135	125	110	91
65	FORD	LTD	4000	390	S3	4	19	18	17	15	12
65	FORD	LTD	4000	427	A	4	52	50	46	41	34
65	FORD	LTD	4000	427	S3	4	7	7	6	5	4
65	FORD	MUSTA	3000	200	A	1	1111	1064	985	869	714
65	FORD	MUSTA	3000	200	S3	1	661	633	586	517	425
65	FORD	MUSTA	3000	200	S4	1	300	287	266	235	193
65	FORD	MUSTA	3000	289	A	2	2010	1925	1783	1572	1291
65	FORD	MUSTA	3000	289	S3	2	1196	1145	1061	935	768
65	FORD	MUSTA	3000	289	S4	2	558	535	495	437	359
65	FORD	TBIRD	4500	390	A	4	794	760	705	621	510
65	FORD	STAWA	0	0	C	0	3031	2903	2690	2371	1948
65	IMPER	IMPER	5500	413	A	4	217	211	202	186	161
65	LINCO	CONTI	5500	430	A	4	436	424	404	374	332
65	MERCU	COMET	3000	200	A	1	517	491	451	396	327
65	MERCU	COMET	3000	200	S3	1	213	202	186	163	134
65	MERCU	COMET	3000	200	S4	1	59	56	51	45	37
65	MERCU	COMET	3000	289	A	2	491	466	428	376	310
65	MERCU	COMET	3000	289	S3	2	202	192	176	155	128
65	MERCU	COMET	3000	289	S4	2	56	53	49	43	35
65	MERCU	MONTR	4000	390	A	2	472	448	412	361	298
65	MERCU	MONTR	4000	390	S3	2	14	13	12	10	8
65	MERCU	MONTR	4000	427	A	4	314	298	274	241	198
65	MERCU	MONTR	4000	427	S3	4	9	8	8	7	5
65	MERCU	MONTC	4000	390	A	2	273	260	239	209	173
65	MERCU	MONTC	4000	390	S3	2	8	7	7	6	5

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	MERCU	MONTC	4000	427	A	4	[illegible]	173	159	139	115
65	MERCU	MONTC	4000	427	S3	4	5	5	4	4	3
65	MERCU	STAWA	0	0	0	0	740	703	646	566	467
65	OLDSM	F-85	3500	225	A	1	122	119	114	104	88
65	OLDSM	F-85	3500	225	S3	1	8	7	7	6	5
65	OLDSM	F-85	3500	225	S4	1	11	10	10	9	8
65	OLDSM	F-85	3500	330	A	2	622	611	585	534	450
65	OLDSM	F-85	3500	330	S3	2	41	40	38	35	29
65	OLDSM	F-85	3500	330	S4	2	56	55	53	48	41
65	OLDSM	F-85	3500	330	A	4	376	369	352	323	271
65	OLDSM	F-85	3500	330	S3	4	24	24	23	21	17
65	OLDSM	F-85	3500	330	S4	4	34	33	32	29	24
65	OLDSM	F-85	3500	400	A	4	124	122	117	106	90
65	OLDSM	F-85	3500	400	S3	4	8	8	7	7	5
65	OLDSM	F-85	3500	400	S4	4	11	11	10	9	8
65	OLDSM	JETST	4000	330	A	4	465	456	437	359	336
65	OLDSM	JETST	4000	330	S3	4	2	2	2	2	1
65	OLDSM	DYN88	4500	425	A	2	969	951	910	832	700
65	OLDSM	DYN88	4500	425	S3	2	4	4	4	4	3
65	OLDSM	DEL88	4500	425	A	2	798	783	750	685	577
65	OLDSM	DEL88	4500	425	S3	2	4	3	3	3	2
65	OLDSM	STARF	4500	425	A	4	131	129	123	113	95
65	OLDSM	STARF	4500	425	S3	4	0	0	0	0	0
65	OLDSM	98	4500	425	A	4	806	791	757	692	582
65	OLDSM	98	4500	425	S3	4	4	3	3	3	2
65	OLDSM	STAWA	0	0	0	0	381	374	358	327	275
65	PLYMO	VALIA	3000	170	A	1	376	370	356	333	290
65	PLYMO	VALIA	3000	170	S3	1	159	157	152	141	123
65	PLYMO	VALIA	3000	225	A	1	266	262	253	236	205
65	PLYMO	VALIA	3000	225	S3	1	112	111	107	100	87
65	PLYMO	VALIA	3000	273	A	2	86	84	82	76	66
65	PLYMO	VALIA	3000	273	S3	2	36	36	34	32	28
65	PLYMO	BELVE	3500	225	A	1	374	369	357	332	288
65	PLYMO	BELVE	3500	225	S3	1	104	103	99	93	80
65	PLYMO	BELVE	3500	225	S4	1	19	19	19	17	15
65	PLYMO	BELVE	3500	273	A	2	171	169	163	152	132
65	PLYMO	BELVE	3500	273	S3	2	48	47	45	42	37
65	PLYMO	BELVE	3500	273	S4	2	9	9	8	8	7
65	PLYMO	BELVE	3500	318	A	2	216	215	206	193	168
65	PLYMO	BELVE	3500	318	S3	2	6	6	5	5	4
65	PLYMO	BELVE	3500	318	S4	2	11	11	11	10	8
65	PLYMO	BELVE	3500	361	A	2	163	161	156	145	126
65	PLYMO	BELVE	3500	361	S3	2	45	45	43	40	35
65	PLYMO	BELVE	3500	361	S4	2	8	8	8	7	6
65	PLYMO	BELVE	3500	383	A	4	109	107	104	96	84

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	PLYMO	BELVE	3500	383	S3	4	30	30	29	27	23
65	PLYMO	BELVE	3500	383	S4	4	5	5	5	5	4
65	PLYMO	BELVE	3500	426	A	4	54	53	52	48	42
65	PLYMO	BELVE	3500	426	S3	4	15	15	14	13	11
65	PLYMO	BELVE	3500	426	S4	4	2	2	2	2	2
65	PLYMO	FURY	4000	225	A	1	252	248	240	223	194
65	PLYMO	FURY	4000	225	S3	1	22	22	21	20	17
65	PLYMO	FURY	4000	225	S4	1	7	7	6	6	5
65	PLYMO	FURY	4000	318	A	2	1161	1145	1107	1030	896
65	PLYMO	FURY	4000	318	S3	2	105	103	100	93	81
65	PLYMO	FURY	4000	318	S4	2	33	33	32	30	26
65	PLYMO	FURY	4000	383	A	2	706	696	673	627	545
65	PLYMO	FURY	4000	383	S3	2	64	63	61	56	49
65	PLYMO	FURY	4000	383	S4	2	20	20	19	18	15
65	PLYMO	FURY	4000	426	A	4	235	232	224	209	181
65	PLYMO	FURY	4000	426	S3	4	21	21	20	18	16
65	PLYMO	FURY	4000	426	S4	4	6	6	6	6	5
65	PLYMO	BARRA	3000	170	A	1	78	76	74	69	60
65	PLYMO	BARRA	3000	170	S3	1	14	14	13	12	11
65	PLYMO	BARRA	3000	170	S4	1	22	21	21	19	17
65	PLYMO	BARRA	3000	225	A	1	37	36	35	32	28
65	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	5
65	PLYMO	BARRA	3000	225	S4	1	10	10	10	9	8
65	PLYMO	BARRA	3000	273	A	2	256	252	244	227	197
65	PLYMO	BARRA	3000	273	S3	2	47	46	44	41	36
65	PLYMO	BARRA	3000	273	S4	2	73	72	69	64	56
65	PLYMO	STAWA	0	0	0	0	835	827	799	744	647
65	PONTI	TEMPE	3500	215	A	1	405	395	376	348	304
65	PONTI	TEMPE	3500	215	S3	1	71	69	66	61	53
65	PONTI	TEMPE	3500	215	S4	1	111	108	103	95	83
65	PONTI	TEMPE	3500	326	A	2	834	812	773	712	626
65	PONTI	TEMPE	3500	326	S3	2	147	143	136	126	110
65	PONTI	TEMPE	3500	326	S4	2	229	222	212	195	171
65	PONTI	TEMPE	3500	389	A	2	531	517	492	453	398
65	PONTI	TEMPE	3500	389	S3	2	94	91	87	80	70
65	PONTI	TEMPE	3500	389	S4	2	145	141	135	124	109
65	PONTI	CATAL	4000	389	A	2	1398	1360	1295	1193	1048
65	PONTI	CATAL	4000	389	S3	2	27	26	25	23	20
65	PONTI	CATAL	4000	389	S4	2	26	25	24	22	19
65	PONTI	CATAL	4000	421	A	4	599	583	555	511	449
65	PONTI	CATAL	4000	421	S3	4	11	11	10	10	8
65	PONTI	CATAL	4000	421	S4	4	11	10	10	9	8
65	PONTI	STARC	4000	389	A	2	205	200	190	175	154
65	PONTI	STARC	4000	389	S3	2	4	3	3	3	3
65	PONTI	STARC	4000	389	S4	2	3	3	3	3	2

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	PONTI	STARC	4000	421	A	4	88	85	81	75	66
65	PONTI	STARC	4000	421	S3	4	1	1	1	1	1
65	PONTI	STARC	4000	421	S4	4	1	1	1	1	1
65	PONTI	BONNE	4500	389	A	4	791	770	733	675	593
65	PONTI	BONNE	4500	389	S3	4	15	15	14	13	11
65	PONTI	BONNE	4500	389	S4	4	14	14	13	12	11
65	PONTI	BONNE	4500	421	A	4	339	330	314	289	254
65	PONTI	BONNE	4500	421	S3	4	6	6	6	5	5
65	PONTI	BONNE	4500	421	S4	4	6	6	5	5	4
65	PONTI	GRANP	4500	389	A	4	330	321	306	282	247
65	PONTI	GRANP	4500	389	S3	4	6	6	6	5	4
65	PONTI	GRANP	4500	389	S4	4	6	6	5	5	4
65	PONTI	GRANP	4500	421	A	4	141	137	131	120	106
65	PONTI	GRANP	4500	421	S3	4	2	2	2	2	2
65	PONTI	GRANP	4500	421	S4	4	2	2	2	2	1
65	PONTI	STAWA	0	0	0	0	538	524	495	459	404

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	BUICK	ELECT	4500	401	A	4	851	859	811	746	662
64	BUICK	ELECT	4500	401	S3	4	7	6	6	6	5
64	BUICK	ELECT	4500	425	A	4	851	859	811	746	662
64	BUICK	ELECT	4500	425	S3	4	7	6	6	6	5
64	BUICK	RIVIE	4500	425	A	4	934	900	851	782	694
64	BUICK	RIVIE	4500	425	S3	4	7	7	6	6	5
64	BUICK	STAWA	0	0	0	0	1029	992	938	862	765
64	CADIL	CALAI	5000	429	A	4	920	899	856	779	657
64	CADIL	DEVIL	5000	429	A	4	2946	2677	2740	2493	2103
64	CADIL	FLEET	5000	429	A	4	460	449	428	389	328
64	CHEVR	CORVA	2750	164	A	2	32	32	31	30	28
64	CHEVR	CORVA	2750	164	S3	2	9	9	9	8	6
64	CHEVR	CORVA	2750	164	S4	2	27	27	26	25	24
64	CHEVR	CORVA	2750	164	A	1	32	32	31	30	28
64	CHEVR	CORVA	2750	164	S3	1	9	9	9	8	8
64	CHEVR	CORVA	2750	164	S4	1	27	27	26	25	24
64	CHEVR	CHEV2	3000	194	A	1	28	27	27	26	24
64	CHEVR	CHEV2	3000	194	S3	1	15	15	14	14	13
64	CHEVR	CHEV2	3000	194	S4	1	0	0	0	0	0
64	CHEVR	CHEV2	3000	230	A	1	28	27	27	26	24
64	CHEVR	CHEV2	3000	230	S3	1	15	15	14	14	13
64	CHEVR	CHEV2	3000	230	S4	1	0	0	0	0	0
64	CHEVR	CHEV2	3000	283	A	2	8	8	8	7	7
64	CHEVR	CHEV2	3000	283	S3	2	4	4	4	4	4
64	CHEVR	CHEV2	3000	283	S4	2	0	0	0	0	0
64	CHEVR	CHEVE	3000	194	A	1	26	26	25	24	23
64	CHEVR	CHEVE	3000	194	S3	1	10	10	10	9	9
64	CHEVR	CHEVE	3000	194	S4	1	3	3	3	3	2
64	CHEVR	CHEVE	3000	230	A	1	26	26	25	24	23
64	CHEVR	CHEVE	3000	230	S3	1	10	10	9	9	9
64	CHEVR	CHEVE	3000	230	S4	1	3	3	3	3	2
64	CHEVR	CHEVE	3500	283	A	2	79	77	76	73	69
64	CHEVR	CHEVE	3500	283	S3	2	30	30	29	28	26
64	CHEVR	CHEVE	3500	283	S4	2	9	9	9	9	8
64	CHEVR	BISCA	3500	230	A	1	19	19	19	16	17
64	CHEVR	BISCA	3500	230	S3	1	5	5	4	4	4
64	CHEVR	BISCA	3500	230	S4	1	1	1	1	0	0
64	CHEVR	BISCA	4000	283	A	2	39	39	38	37	34
64	CHEVR	BISCA	4000	283	S3	2	10	10	9	9	9
64	CHEVR	BISCA	4000	283	S4	2	2	2	2	1	1
64	CHEVR	BISCA	4000	327	A	4	26	25	25	24	22
64	CHEVR	BISCA	4000	327	S3	4	6	6	6	6	5
64	CHEVR	BISCA	4000	327	S4	4	1	1	1	1	1
64	CHEVR	BELAI	3500	230	A	1	37	36	35	34	32
64	CHEVR	BELAI	3500	230	S3	1	9	9	9	8	8

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-PID 72	73	74	75
64	CHEVR	BELAI	3500	230	S4	1	1	1	1	1	1
64	CHEVR	BELAI	4000	283	A	2	74	73	71	68	65
64	CHEVR	BELAI	4000	283	S3	2	19	19	18	17	16
64	CHEVR	BELAI	4000	283	S4	2	3	3	3	3	3
64	CHEVR	BELAI	4000	327	A	4	40	39	38	37	35
64	CHEVR	BELAI	4000	327	S3	4	10	10	10	9	9
64	CHEVR	BELAI	4000	327	S4	4	2	2	2	1	1
64	CHEVR	BELAI	4000	409	A	4	8	7	7	7	7
64	CHEVR	BELAI	4000	409	S3	4	2	2	2	1	1
64	CHEVR	BELAI	4000	409	S4	4	0	0	0	0	0
64	CHEVR	IMPAL	4000	230	A	1	108	106	104	100	94
64	CHEVR	IMPAL	4000	230	S3	1	28	27	27	26	24
64	CHEVR	IMPAL	4000	230	S4	1	5	5	5	5	5
64	CHEVR	IMPAL	4000	283	A	2	216	213	208	200	189
64	CHEVR	IMPAL	4000	283	S3	2	56	55	54	52	49
64	CHEVR	IMPAL	4000	283	S4	2	11	11	11	10	10
64	CHEVR	IMPAL	4000	327	A	4	117	115	113	108	102
64	CHEVR	IMPAL	4000	327	S3	4	30	30	29	28	26
64	CHEVR	IMPAL	4000	327	S4	4	6	6	6	5	5
64	CHEVR	IMPAL	4000	409	A	4	23	23	22	21	20
64	CHEVR	IMPAL	4000	409	S3	4	6	6	5	5	5
64	CHEVR	IMPAL	4000	409	S4	4	1	1	1	1	1
64	CHEVR	CORVE	3500	327	A	4	7	6	6	6	6
64	CHEVR	CORVE	3500	327	S3	4	2	1	1	1	1
64	CHEVR	CORVE	3500	327	S4	4	5	5	5	5	5
64	CHEVR	STAWA	0	0	0	0	187	184	180	173	164
64	CHRYS	NEWPO	4000	361	A	2	****	****	****	9831	9061
64	CHRYS	NEWPO	4000	361	S3	2	164	154	148	139	128
64	CHRYS	300	4000	383	A	2	3234	3050	2919	2749	2539
64	CHRYS	300	4000	383	S3	2	45	43	41	39	36
64	CHRYS	300	4000	413	A	4	662	624	597	563	520
64	CHRYS	300	4000	413	S3	4	9	8	8	7	7
64	CHRYS	NEWYO	4500	413	A	4	446	420	402	379	350
64	CHRYS	STAWA	0	0	0	0	1529	1442	1380	1300	1201
64	DODGE	DART	3000	170	A	1	361	358	345	319	275
64	DODGE	DART	3000	170	S3	1	128	127	122	113	97
64	DODGE	DART	3000	170	S4	1	26	26	25	23	20
64	DODGE	DART	3000	273	A	2	47	47	45	41	36
64	DODGE	DART	3000	273	S3	2	16	16	16	14	12
64	DODGE	DART	3000	273	S4	2	3	3	3	3	2
64	DODGE	330	3500	225	A	1	39	38	37	34	29
64	DODGE	330	3500	225	S3	1	6	6	5	5	4
64	DODGE	330	3500	225	S4	1	1	1	0	0	0
64	DODGE	330	3500	318	A	2	78	78	75	69	60
64	DODGE	330	3500	318	S3	2	12	12	11	10	9

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTRATIONS JULY 1971	72	73	74	75
64	DODGE	330	3500	318	[illegible]	2	2	2	1	1	[illegible]
64	DODGE	330	3500	383	A	2	23	23	22	21	18
64	DODGE	330	3500	383	S3	2	3	3	3	3	2
64	DODGE	330	3500	383	S4	2	0	0	0	0	0
64	DODGE	330	3500	426	A	4	15	15	15	13	12
64	DODGE	330	3500	426	S3	4	2	2	2	2	1
64	DODGE	330	3500	426	S4	4	0	0	0	0	0
64	DODGE	440	3500	225	A	1	58	57	55	51	[illegible]
64	DODGE	440	3500	225	S3	1	9	8	8	7	6
64	DODGE	440	3500	225	S4	1	1	1	1	1	1
64	DODGE	440	3500	318	A	2	117	116	112	104	[illegible]
64	DODGE	440	3500	318	S3	2	18	18	17	16	13
64	DODGE	440	3500	318	S4	2	3	3	2	2	2
64	DODGE	440	3500	383	A	2	35	35	34	31	27
64	DODGE	440	3500	383	S3	2	5	5	5	4	4
64	DODGE	440	3500	383	S4	2	0	0	0	0	0
64	DODGE	440	3500	426	A	4	23	23	22	20	17
64	DODGE	440	3500	426	S3	4	3	3	3	3	2
64	DODGE	440	3500	426	S4	4	0	0	0	0	0
64	DODGE	POLAR	[illegible]	225	A	1	15	19	18	17	15
64	DODGE	POLAR	3500	225	S3	1	3	3	2	2	2
64	DODGE	POLAR	3500	225	S4	1	0	0	0	0	0
64	DODGE	POLAR	3500	318	A	2	40	39	38	35	30
64	DODGE	POLAR	3500	318	S3	2	6	6	5	5	4
64	DODGE	POLAR	3500	318	S4	2	1	1	0	0	0
64	DODGE	[illegible]	3500	383	A	2	12	12	11	10	9
64	DODGE	[illegible]	[illegible]	383	S3	2	1	1	1	1	1
64	DODGE	[illegible]	3500	383	S4	2	0	0	0	0	0
64	DODGE	[illegible]	3500	426	A	4	8	7	7	7	6
64	DODGE	POLAR	3500	426	S3	4	1	1	1	1	0
64	DODGE	POLAR	3500	426	S4	4	0	0	0	0	0
64	DODGE	CORON	3500	273	A	2	110	109	105	97	84
64	DODGE	CORON	3500	273	S3	2	17	16	16	15	13
64	DODGE	CORON	3500	273	S4	2	2	2	2	2	2
64	DODGE	880	4000		A	2	32	32	31	29	25
[illegible]	[illegible]	[illegible]	4000		[illegible]	2	0	0	0	0	0
[illegible]	DODGE	880	4000		A	2	21	21	21	19	16
64	DODGE	880	4000		[illegible]	2	0	0	0	0	0
64	DODGE	CU880	4000	361	A	2	18	17	17	16	13
64	DODGE	CU880	4000	383	S3	2	0	0	0	0	0
64	DODGE	MONAC	4000	383	A	4	8	8	7	7	6
64	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
64	DODGE	STAWA	0	0	0	0	189	187	180	167	144
64	FORD	FALCO	2750	144	A	1	148	145	137	121	55
64	FORD	FALC	2750	144	S3	1	115	112	106	94	74

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	FORD	FALCO	2750	144	S4	1	18	17	16	14	11
64	FORD	FALCO	2750	170	A	1	55	54	51	45	35
64	FORD	FALCO	2750	170	S3	1	43	42	39	35	27
64	FORD	FALCO	2750	170	S4	1	6	6	6	5	4
64	FORD	FALCO	2750	200	A	1	29	29	27	24	19
64	FORD	FALCO	2750	200	S3	1	23	22	21	18	14
64	FORD	FALCO	2750	200	S4	1	3	3	3	2	2
64	FORD	FALCO	3000	260	A	1	63	61	58	51	40
64	FORD	FALCO	3000	260	S3	1	49	48	45	40	31
64	FORD	FALCO	3000	260	S4	1	7	7	7	6	4
64	FORD	FAIRL	3000	170	A	1	67	66	62	55	43
64	FORD	FAIRL	3000	170	S3	1	32	31	29	26	20
64	FORD	FAIRL	3000	200	A	1	36	35	33	29	23
64	FORD	FAIRL	3000	200	S3	1	17	16	15	13	10
64	FORD	FAIRL	3000	260	A	1	184	180	170	150	118
64	FORD	FAIRL	3000	260	S3	1	87	85	80	71	56
64	FORD	FAIRL	3000	289	A	2	72	70	66	58	46
64	FORD	FAIRL	3000	289	S3	2	23	22	21	19	15
64	FORD	CUSTO	4000	200	A	1	48	47	44	39	31
64	FORD	CUSTO	4000	200	S3	1	15	15	14	12	10
64	FORD	CUSTO	4000	289	A	2	33	33	31	27	21
64	FORD	CUSTO	4000	289	S3	2	11	10	10	9	7
64	FORD	CUSTO	4000	352	A	2	33	33	31	27	21
64	FORD	CUSTO	4000	352	S3	2	11	10	10	9	7
64	FORD	CUSTO	4000	390	A	4	34	33	31	27	22
64	FORD	CUSTO	4000	390	S3	4	11	10	10	9	7
64	FORD	GALAX	4000	289	A	2	549	536	506	449	353
64	FORD	GALAX	4000	289	S3	2	91	89	84	74	58
64	FORD	GALAX	4000	289	S4	2	34	33	31	28	22
64	FORD	GALAX	4000	352	A	2	329	321	304	269	212
64	FORD	GALAX	4000	352	S3	2	54	53	50	44	35
64	FORD	GALAX	4000	352	S4	2	20	20	19	16	13
64	FORD	GALAX	4000	390	A	4	219	214	202	179	141
64	FORD	GALAX	4000	390	S3	4	365	356	337	299	235
64	FORD	GALAX	4000	390	S4	4	13	13	12	11	8
64	FORD	MUSTA	3000	200	A	1	82	80	76	67	53
64	FORD	MUSTA	3000	200	S3	1	53	51	48	43	34
64	FORD	MUSTA	3000	200	S4	1	32	31	29	26	20
64	FORD	MUSTA	3000	289	A	2	225	219	207	184	145
64	FORD	MUSTA	3000	289	S3	2	144	140	133	117	92
64	FORD	MUSTA	3000	289	S4	2	88	86	81	72	56
64	FORD	TBIRD	4500	390	A	4	218	213	201	178	140
64	FORD	STAWA	0	0	0	0	599	585	553	490	386
64	IMPER	IMPER	5500	413	A	4	****	****	****	****	7529
64	LINCO	CONTI	5500	430	A	4	281	265	243	211	168

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	MERCU	COMET	3000	170	A	1	42	40	37	33	28
64	MERCU	COMET	3000	170	S3	1	16	16	15	13	11
64	MERCU	COMET	3000	170	S4	1	3	3	2	2	2
64	MERCU	COMET	3000	200	A	1	37	36	33	30	25
64	MERCU	COMET	3000	200	S3	1	14	14	13	11	10
64	MERCU	COMET	3000	200	S4	1	2	2	2	2	1
64	MERCU	COMET	3000	260	A	2	40	39	36	32	27
64	MERCU	COMET	3000	260	S3	2	16	15	14	12	10
64	MERCU	COMET	3000	260	S4	2	2	2	2	2	2
64	MERCU	COMET	3000	289	A	2	30	29	27	24	20
64	MERCU	COMET	3000	289	S3	2	11	11	10	9	8
64	MERCU	COMET	3000	289	S4	2	2	2	1	1	1
64	MERCU	MONTR	4500	390	A	2	64	62	57	51	43
64	MERCU	MONTR	4500	390	S3	2	3	3	3	2	2
64	MERCU	MONTE	4500	390	A	2	40	38	36	32	27
64	MERCU	MONTE	4500	390	S3	2	2	2	1	1	1
64	MERCU	STAWA	0	0	0	0	65	63	59	52	44
64	OLDSM	F-85	3500	225	A	1	90	82	72	60	45
64	OLDSM	F-85	3500	225	S3	1	11	10	8	7	5
64	OLDSM	F-85	3500	225	S4	1	4	4	3	3	2
64	OLDSM	F-85	3500	330	A	2	342	315	276	228	173
64	OLDSM	F-85	3500	330	S3	2	42	38	34	28	21
64	OLDSM	F-85	3500	330	S4	2	18	16	14	12	9
64	OLDSM	F-85	3500	330	A	4	288	265	232	192	146
64	OLDSM	F-85	3500	330	S3	4	35	32	28	23	18
64	OLDSM	F-85	3500	330	S4	4	15	14	12	10	7
64	OLDSM	JETST	4000	330	A	2	403	370	324	268	204
64	OLDSM	JETST	4000	330	S3	2	2	2	1	1	1
64	OLDSM	DYN88	4500	394	A	2	934	858	753	621	473
64	OLDSM	DYN88	4500	394	S3	2	5	5	4	3	2
64	OLDSM	SUP88	4500	394	A	4	151	139	122	100	76
64	OLDSM	SUP88	4500	394	S3	4	0	0	0	0	0
64	OLDSM	STARF	4500	394	A	4	85	78	68	56	43
64	OLDSM	STARF	4500	394	S3	4	0	0	0	0	0
64	OLDSM	98	4500	394	A	4	369	339	298	246	187
64	OLDSM	98	4500	394	S3	4	2	2	1	1	1
64	OLDSM	STAWA	0	0	0	0	233	214	188	155	118
64	PLYMO	VALIA	3000	170	A	1	1060	1015	927	780	572
64	PLYMO	VALIA	3000	170	S3	1	443	424	387	326	239
64	PLYMO	VALIA	3000	170	S4	1	107	103	94	79	58
64	PLYMO	VALIA	3000	273	A	2	232	222	203	171	125
64	PLYMO	VALIA	3000	273	S3	2	97	93	85	71	52
64	PLYMO	VALIA	3000	273	S4	2	23	22	20	17	12
64	PLYMO	BELVE	3000	225	A	1	77	73	67	56	41
64	PLYMO	BELVE	3000	225	S3	1	16	15	14	11	8

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	PLYMO	BELVE	3000	225	S4	1	3	3	3	2	2
64	PLYMO	BELVE	3500	318	A	2	93	89	81	68	50
64	PLYMO	BELVE	3500	318	S3	2	19	18	17	14	10
64	PLYMO	BELVE	3500	318	S4	2	4	4	4	3	2
64	PLYMO	BELVE	3500	361	A	2	56	54	49	41	30
64	PLYMO	BELVE	3500	361	S3	2	11	11	10	8	6
64	PLYMO	BELVE	3500	361	S4	2	2	2	2	2	1
64	PLYMO	BELVE	3500	383	A	4	42	40	37	31	23
64	PLYMO	BELVE	3500	383	S3	4	8	8	7	6	4
64	PLYMO	BELVE	3500	383	S4	4	2	2	1	1	1
64	PLYMO	BELVE	3500	426	A	4	14	13	12	10	7
64	PLYMO	BELVE	3500	426	S3	4	2	2	2	2	1
64	PLYMO	BELVE	3500	426	S4	4	0	0	0	0	0
64	PLYMO	SAVOY	3500	225	A	1	131	126	115	97	71
64	PLYMO	SAVOY	3500	225	S3	1	27	26	24	20	14
64	PLYMO	SAVOY	3500	225	S4	1	6	6	5	5	3
64	PLYMO	SAVOY	3500	318	A	2	160	153	140	117	86
64	PLYMO	SAVOY	3500	318	S3	2	33	32	29	24	18
64	PLYMO	SAVOY	3500	318	S4	2	8	7	7	6	4
64	PLYMO	SAVOY	3500	361	A	2	97	93	85	71	52
64	PLYMO	SAVOY	3500	361	S3	2	20	19	17	15	11
64	PLYMO	SAVOY	3500	361	S4	2	5	4	4	3	2
64	PLYMO	SAVOY	3500	383	A	4	73	69	63	53	39
64	PLYMO	SAVOY	3500	383	S3	4	15	14	13	11	8
64	PLYMO	SAVOY	3500	383	S4	4	3	3	3	2	2
64	PLYMO	SAVOY	3500	426	A	4	24	23	21	17	13
64	PLYMO	SAVOY	3500	426	S3	4	5	4	4	3	2
64	PLYMO	SAVOY	3500	426	S4	4	1	1	1	0	0
64	PLYMO	FURY	3500	225	A	1	274	262	239	201	147
64	PLYMO	FURY	3500	225	S3	1	57	54	50	42	30
64	PLYMO	FURY	3500	225	S4	1	14	13	12	10	7
64	PLYMO	FURY	3500	318	A	2	332	318	291	244	179
64	PLYMO	FURY	3500	318	S3	2	69	66	60	51	37
64	PLYMO	FURY	3500	318	S4	2	17	16	15	12	9
64	PLYMO	FURY	3500	383	A	4	151	145	132	111	81
64	PLYMO	FURY	3500	383	S3	4	31	30	27	23	17
64	PLYMO	FURY	3500	383	S4	4	7	7	6	5	4
64	PLYMO	FURY	3500	426	A	4	50	48	44	37	27
64	PLYMO	FURY	3500	426	S3	4	10	10	9	7	5
64	PLYMO	FURY	3500	426	S4	4	2	2	2	1	1
64	PLYMO	STAWA	0	0	0	0	661	633	578	486	357
64	PONTI	TEMPE	3500	215	A	1	431	417	388	337	261
64	PONTI	TEMPE	3500	215	S3	1	98	95	89	77	59
64	PONTI	TEMPE	3500	215	S4	1	84	81	75	65	50
64	PONTI	TEMPE	3500	326	A	2	390	377	351	305	226

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	PONTI	TEMPE	3500	326	S3	2	89	86	80	70	54
64	PONTI	TEMPE	3500	326	S4	2	76	73	68	59	46
64	PONTI	TEMPE	3500	389	A	4	205	198	184	160	124
64	PONTI	TEMPE	3500	389	S3	4	47	45	42	36	28
64	PONTI	TEMPE	3500	389	S4	4	40	38	36	31	24
64	PONTI	CATAL	4000	389	A	2	1002	965	902	784	607
64	PONTI	CATAL	4000	389	S3	2	43	42	39	34	26
64	PONTI	CATAL	4000	421	A	4	334	323	300	261	202
64	PONTI	CATAL	4000	421	S3	4	14	14	13	11	8
64	PONTI	STARC	4000	389	A	2	162	156	145	126	98
64	PONTI	STARC	4000	389	S3	2	7	6	6	5	4
64	PONTI	STARC	4000	421	A	4	54	52	48	42	32
64	PONTI	STARC	4000	421	S3	4	2	2	2	1	1
64	PONTI	BONNE	4500	389	A	4	497	480	447	389	301
64	PONTI	BONNE	4500	389	S3	4	21	21	19	17	13
64	PONTI	BONNE	4500	421	A	4	165	160	149	129	100
64	PONTI	BONNE	4500	421	S3	4	7	7	6	5	4
64	PONTI	GRANP	4500	389	A	4	275	265	247	215	166
64	PONTI	GRANP	4500	389	S3	4	12	11	10	9	7
64	PONTI	GRANP	4500	421	A	4	91	88	82	71	55
64	PONTI	GRANP	4500	421	S3	4	4	3	3	3	2
64	PONTI	STAWA	0	0	0	0	314	304	283	246	190

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	AMMCT	AMERI	3000	196	A	1	619	569	503	421	328
63	AMMCT	AMERI	3000	196	S3	1	567	521	461	386	300
63	AMMCT	CLASS	3000	196	A	1	1648	1514	1339	1120	873
63	AMMCT	CLASS	3000	196	S3	1	1510	1388	1227	1026	800
63	AMMCT	AMBAS	3500	327	A	2	167	154	136	114	88
63	AMMCT	AMBAS	3500	327	S3	2	153	141	124	104	81
63	BUICK	SPECI	3000	198	A	1	394	371	337	284	213
63	BUICK	SPECI	3000	198	S3	1	53	50	45	38	28
63	BUICK	SPECI	3000	215	A	2	579	540	492	415	310
63	BUICK	SPECI	3000	215	S3	2	72	68	62	52	39
63	BUICK	LESAB	4000	401	A	2	1326	1246	1134	956	715
63	BUICK	LESAB	4000	401	S3	2	13	12	11	9	7
63	BUICK	WILDC	4000	401	A	4	389	365	332	280	209
63	BUICK	WILDC	4000	401	S3	4	3	3	3	2	2
63	BUICK	RIVIE	4000	401	A	4	312	293	267	225	168
63	BUICK	RIVIE	4000	401	S3	4	3	2	2	2	1
63	BUICK	ELECT	4500	401	A	4	478	449	409	345	257
63	BUICK	ELECT	4500	401	S3	4	4	4	4	3	2
63	BUICK	STAWA	0	0	0	0	244	230	209	176	132
63	CADIL	CADIL	5000	390	A	4	1486	1485	1484	1483	1481
63	CHEVR	CORVA	2750	145	A	2	965	735	504	253	78
63	CHEVR	CORVA	2750	145	S3	2	128	98	66	33	10
63	CHEVR	CHEV2	2750	153	A	1	15	11	8	4	1
63	CHEVR	CHEV2	2750	153	S3	1	8	6	4	2	0
63	CHEVR	CHEV2	2750	194	A	1	1545	1178	803	403	124
63	CHEVR	CHEV2	2750	194	S3	1	839	640	436	219	67
63	CHEVR	BISCA	3500	236	A	1	372	283	193	97	30
63	CHEVR	BISCA	3500	236	S3	1	133	101	69	34	10
63	CHEVR	BISCA	3500	283	A	2	434	331	225	113	35
63	CHEVR	BISCA	3500	283	S3	2	155	118	81	40	12
63	CHEVR	BISCA	3500	327	A	4	434	331	225	113	35
63	CHEVR	BISCA	3500	327	S3	4	155	118	81	40	12
63	CHEVR	BELAI	4000	236	A	1	717	546	372	187	57
63	CHEVR	BELAI	4000	236	S3	1	257	196	133	67	20
63	CHEVR	BELAI	4000	283	A	2	836	638	435	218	67
63	CHEVR	BELAI	4000	283	S3	2	300	228	156	78	24
63	CHEVR	BELAI	4000	327	A	4	836	638	435	218	67
63	CHEVR	BELAI	4000	327	S3	4	300	228	156	78	24
63	CHEVR	IMPAL	4000	236	A	1	1753	1337	911	456	141
63	CHEVR	IMPAL	4000	236	S3	1	628	479	327	164	50
63	CHEVR	IMPAL	4000	283	A	2	2045	1560	1063	534	165
63	CHEVR	IMPAL	4000	283	S3	2	723	555	381	191	59
63	CHEVR	IMPAL	4000	327	A	4	2045	1560	1063	534	165
63	CHEVR	IMPAL	4000	327	S3	4	723	555	381	191	59
63	CHEVR	CORVE	3500	327	A	4	42	32	22	11	3

YR	MAKE	MODEL	WEIGHT	ENG.	TRANS	CARB	REGISTERED	PROJECTED-MID			
				DISP	TYPE	TYPE	JULY 1971	72	73	74	75
63	CHEVR	CORVE	3500	327	S3	4	169	129	86	44	13
63	CHEVR	STAWA	0	0	0	0	2641	2014	1373	690	213
63	CHRYS	NEWPO	4000	361	A	2	703	695	643	553	421
63	CHRYS	NEWPO	4000	361	S3	2	28	28	26	22	17
63	CHRYS	300	4000	383	A	2	231	228	211	182	138
63	CHRYS	300	4000	383	S3	2	9	9	8	7	5
63	CHRYS	NEWYO	4500	413	A	4	266	262	243	209	159
63	CHRYS	NEWYO	4500	413	S3	4	10	10	9	8	6
63	CHRYS	STAWA	0	0	0	0	98	97	89	77	58
63	DODGE	DART	3000	170	A	1	749	706	564	275	35
63	DODGE	DART	3000	170	S3	1	321	302	241	118	15
63	DODGE	330	3500	225	A	1	125	118	94	46	5
63	DODGE	330	3500	225	S3	1	39	37	29	14	1
63	DODGE	330	3500	318	A	2	238	225	179	87	11
63	DODGE	330	3500	318	S3	2	74	70	56	27	3
63	DODGE	440	3500	225	A	1	91	86	69	33	4
63	DODGE	440	3500	225	S3	1	28	27	21	10	1
63	DODGE	440	3500	318	A	2	174	164	131	64	8
63	DODGE	440	3500	318	S3	2	54	51	41	20	2
63	DODGE	POLAR	4000	225	A	1	79	74	59	29	3
63	DODGE	POLAR	4000	225	S3	1	24	23	18	9	1
63	DODGE	POLAR	4000	318	A	2	169	159	127	62	7
63	DODGE	POLAR	4000	318	S3	2	53	50	40	19	2
63	DODGE	PO500	4000	383	A	2	55	52	42	20	2
63	DODGE	PO500	4000	383	S3	2	11	10	8	4	0
63	DODGE	880	4000	361	A	2	128	121	96	47	6
63	DODGE	880	4000	361	S3	2	1	1	0	0	0
63	DODGE	CU880	4000	361	A	2	128	121	96	47	6
63	DODGE	CU880	4000	361	S3	2	1	1	0	0	0
63	DODGE	STAWA	0	0	0	0	343	324	258	126	16
63	FORD	FALCO	2750	144	A	1	1070	965	829	641	424
63	FORD	FALCO	2750	144	S3	1	1049	946	813	629	415
63	FORD	FALCO	2750	221	A	2	152	137	118	91	60
63	FORD	FALCO	2750	221	S3	2	149	135	116	89	59
63	FORD	FAIRL	3000	170	A	1	423	381	328	253	167
63	FORD	FAIRL	3000	170	S3	1	246	222	190	147	97
63	FORD	FA500	3500	221	A	2	1179	1063	914	707	467
63	FORD	FA500	3500	221	S3	2	685	618	531	411	271
63	FORD	CUSTO	3000	170	A	1	409	369	317	245	162
63	FORD	CUSTO	3000	170	S3	1	238	214	184	142	94
63	FORD	CU500	3500	221	A	2	628	566	487	376	248
63	FORD	CU500	3500	221	S3	2	365	329	283	219	144
63	FORD	GALAX	3500	223	A	1	20	18	15	12	8
63	FORD	GALAX	3500	223	S3	1	5	5	4	3	2
63	FORD	GALAX	3500	260	A	2	3732	3366	2893	2238	1478

YR	MAKE	MODEL	WEIGHT	ENG.	TRANS	CARB	REGISTERED	PROJECTED-MID			
				DISP	TYPE	TYPE	JULY 1971	72	73	74	75
63	FORD	GALAX	3500	260	S3	2	1052	949	816	631	417
63	FORD	TBIRD	4500	390	A	4	611	550	473	366	242
63	FORD	STAWA	0	0	0	0	2465	2223	1911	1479	976
63	IMPER	IMPER	5000	413	A	4	171	158	137	109	76
63	LINCO	LINCO	5500	430	A	4	337	295	262	221	174
63	MERCU	COMET	2750	144	A	1	665	532	439	334	230
63	MERCU	COMET	2750	144	S3	1	371	295	243	185	127
63	MERCU	COMET	2750	221	A	2	161	128	105	80	55
63	MERCU	COMET	2750	221	S3	2	89	71	58	44	30
63	MERCU	METEO	3500	170	A	1	20	16	13	10	7
63	MERCU	METEO	3500	170	S3	1	5	4	3	2	1
63	MERCU	METEO	3500	221	A	2	215	171	141	107	74
63	MERCU	METEO	3500	221	S3	2	55	43	36	27	18
63	MERCU	MONTR	4500	390	A	2	836	665	548	418	287
63	MERCU	MONTR	4500	390	S3	2	29	23	19	14	10
63	MERCU	MONTE	4500	390	A	4	80	64	52	40	27
63	MERCU	MONTE	4500	390	S3	4	2	2	1	1	0
63	MERCU	STAWA	0	0	0	0	364	289	239	182	125
63	OLDSM	F-85	3000	215	A	2	847	724	427	90	1
63	OLDSM	F-85	3000	215	S3	2	109	93	54	11	0
63	OLDSM	JETST	4000	330	A	4	144	123	72	15	0
63	OLDSM	JETST	4000	330	S3	4	18	15	9	1	0
63	OLDSM	DYN88	4500	394	A	2	1489	1273	750	159	2
63	OLDSM	DYN88	4500	394	S3	2	7	6	3	0	0
63	OLDSM	SUP88	4500	394	A	4	453	387	228	48	0
63	OLDSM	SUP88	4500	394	S3	4	2	1	1	0	0
63	OLDSM	STARF	4500	394	A	4	200	171	101	21	0
63	OLDSM	STARF	4500	394	S3	4	1	0	0	0	0
63	OLDSM	98	4500	394	A	4	576	452	290	61	0
63	OLDSM	98	4500	394	S3	4	2	2	1	0	0
63	OLDSM	STAWA	0	0	0	0	234	200	118	25	0
63	PLYMO	VALIA	3000	170	A	1	915	830	722	559	358
63	PLYMO	VALIA	3000	170	S3	1	514	467	406	314	201
63	PLYMO	SAVOY	3500	225	A	1	154	140	122	94	60
63	PLYMO	SAVOY	3500	225	S3	1	48	44	38	29	19
63	PLYMO	SAVOY	3500	318	A	2	293	266	231	179	115
63	PLYMO	SAVOY	3500	318	S3	2	92	83	72	56	36
63	PLYMO	BELVE	3500	225	A	1	156	142	123	95	61
63	PLYMO	BELVE	3500	225	S3	1	49	44	38	30	19
63	PLYMO	BELVE	3500	318	A	2	297	269	234	181	116
63	PLYMO	BELVE	3500	318	S3	2	93	84	73	57	36
63	PLYMO	FURY	3500	225	A	1	188	171	148	115	73
63	PLYMO	FURY	3500	225	S3	1	59	53	46	36	23
63	PLYMO	FURY	3500	318	A	2	358	325	282	218	140
63	PLYMO	FURY	3500	318	S3	2	112	102	88	68	44

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	PLYMO	STAWA	0	0	0	0	487	443	385	298	191
63	PONTI	TEMPE	3000	194	A	1	479	455	427	394	359
63	PONTI	TEMPE	3000	194	S3	1	171	163	153	141	128
63	PONTI	TEMPE	3000	326	A	2	296	281	263	244	221
63	PONTI	TEMPE	3000	326	S3	2	106	100	94	87	79
63	PONTI	CATAL	4000	389	A	2	1644	1562	1465	1354	1232
63	PONTI	CATAL	4000	389	S3	2	86	82	77	71	64
63	PONTI	STARC	4000	389	A	2	315	300	281	260	236
63	PONTI	STARC	4000	389	S3	2	16	15	14	13	12
63	PONTI	BONNE	4500	389	A	4	836	755	745	689	627
63	PONTI	BONNE	4500	389	S3	4	44	41	39	36	33
63	PONTI	GRANP	4500	389	A	4	567	539	505	467	425
63	PONTI	GRANP	4500	389	S3	4	29	28	26	24	22
63	PONTI	STAWA	0	0	0	0	351	333	312	289	263

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	AMMCT	AMERI	3000	196	A	1	531	167	23	0	0
62	AMMCT	AMERI	3000	196	A	1	454	143	19	0	0
62	AMMCT	CLASS	3000	196	A	1	1269	400	55	0	0
62	AMMCT	CLASS	3000	196	S3	1	1085	342	47	0	0
62	AMMCT	AMBAS	3500	327	A	2	161	50	7	0	0
62	AMMCT	AMBAS	3500	327	S3	2	137	43	6	0	0
62	BUICK	SPECI	3000	198	A	1	615	530	383	192	48
62	BUICK	SPECI	3000	198	S3	1	96	82	59	30	7
62	BUICK	SPECI	3000	215	A	1	431	371	268	135	34
62	BUICK	SPECI	3000	215	S3	1	67	57	41	21	5
62	BUICK	LESAB	4500	401	A	2	1191	1025	742	373	94
62	BUICK	INVIC	4500	401	A	4	353	303	220	110	27
62	BUICK	RIVIE	4500	401	A	4	75	65	47	23	5
62	BUICK	ELECT	4500	401	A	4	523	450	326	163	41
62	BUICK	STAWA	0	0	0	0	283	244	176	88	22
62	CADIL	CADIL	5000	390	A	4	1536	1443	1363	1255	1116
62	CHEVR	CORVA	2750	145	A	2	1140	283	33	0	0
62	CHEVR	CORVA	2750	145	S3	2	1235	307	36	0	0
62	CHEVR	CHEV2	2750	153	A	1	106	26	3	0	0
62	CHEVR	CHEV2	2750	153	S3	1	71	17	2	0	0
62	CHEVR	CHEV2	2750	194	A	1	1349	335	39	0	0
62	CHEVR	CHEV2	2750	194	S3	1	903	224	26	0	0
62	CHEVR	BISCA	3500	236	A	1	375	93	11	0	0
62	CHEVR	BISCA	3500	236	S3	1	141	35	4	0	0
62	CHEVR	BISCA	3500	283	A	2	700	174	20	0	0
62	CHEVR	BISCA	3500	283	S3	2	264	65	7	0	0
62	CHEVR	BELAI	4000	236	A	1	786	195	23	0	0
62	CHEVR	BELAI	4000	236	S3	1	296	73	8	0	0
62	CHEVR	BELAI	4000	283	A	2	1467	364	43	0	0
62	CHEVR	BELAI	4000	283	S3	2	553	137	16	0	0
62	CHEVR	IMPAL	4000	236	A	1	1593	396	47	0	0
62	CHEVR	IMPAL	4000	236	S3	1	601	149	17	0	0
62	CHEVR	IMPAL	4000	283	A	2	2971	738	87	1	0
62	CHEVR	IMPAL	4000	283	S3	2	1121	278	33	0	0
62	CHEVR	CORVE	3500	327	A	4	66	16	1	0	0
62	CHEVR	CORVE	3500	327	S3	4	66	16	1	0	0
62	CHEVR	STAWA	0	0	0	0	2375	550	70	0	0
62	CHRYS	NEWPO	4000	361	A	2	735	514	188	12	0
62	CHRYS	NEWPO	4000	361	S3	2	18	13	4	0	0
62	CHRYS	300	4000	383	A	4	227	159	58	3	0
62	CHRYS	300	4000	383	S3	4	5	4	1	0	0
62	CHRYS	NEWYO	4500	413	A	4	204	143	52	3	0
62	CHRYS	NEWYO	4500	413	S3	4	5	3	1	0	0
62	CHRYS	STAWA	0	0	0	0	85	59	21	1	0
62	DODGE	LANCE	3000	170	A	1	251	69	18	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	DODGE	LANCE	3000	170	S3	1	132	47	9	0	0
62	DODGE	DART	3500	225	A	1	200	71	14	0	0
62	DODGE	DART	3500	225	S3	1	43	15	3	0	0
62	DODGE	DART	3500	318	A	2	358	128	26	1	0
62	DODGE	DART	3500	318	S3	2	77	27	5	0	0
62	DODGE	POLAR	3500	361	A	4	108	38	8	0	0
62	DODGE	POLAR	3500	361	S3	4	23	8	1	0	0
62	DODGE	POLAR	3500	383	A	4	126	45	9	0	0
62	DODGE	POLAR	3500	383	S3	4	27	9	2	0	0
62	DODGE	POLAR	3500	413	A	4	126	45	9	0	0
62	DODGE	POLAR	3500	413	S3	4	27	9	2	0	0
62	DODGE	STAWA	0	0	0	0	377	134	27	1	0
62	FORD	FALCO	2750	144	A	1	1119	407	87	3	0
62	FORD	FALCO	2750	144	S3	1	1049	382	82	3	0
62	FORD	FAIRL	3000	170	A	1	619	225	48	2	0
62	FORD	FAIRL	3000	170	S3	1	441	160	34	1	0
62	FORD	FAIRL	3000	226	A	2	1049	382	82	3	0
62	FORD	FAIRL	3000	226	S3	2	747	272	58	2	0
62	FORD	GALAX	4000	223	A	1	556	202	43	1	0
62	FORD	GALAX	4000	223	S3	1	156	57	12	0	0
62	FORD	GALAX	4000	292	A	2	3307	1203	258	11	0
62	FORD	GALAX	4000	292	S3	2	932	339	72	3	0
62	FORD	TBIRD	4500	390	A	4	651	237	50	2	0
62	FORD	STAWA	0	0	0	0	2181	793	170	7	0
62	IMPER	IMPER	5000	413	A	4	159	124	99	69	40
62	LINCO	LINCO	5000	430	A	4	371	312	263	207	149
62	MERCU	COMET	2750	144	A	1	726	620	467	282	120
62	MERCU	COMET	2750	144	S3	1	356	338	254	154	66
62	MERCU	METEO	3000	170	A	1	98	84	63	38	16
62	MERCU	METEO	3000	170	S3	1	34	29	22	13	5
62	MERCU	METEO	3000	221	A	2	403	344	259	156	67
62	MERCU	METEO	3000	221	S3	2	141	121	91	55	23
62	MERCU	MONTR	4000	223	A	1	13	11	8	5	2
62	MERCU	MONTR	4000	223	S3	1	0	0	0	0	0
62	MERCU	MONTR	4000	292	A	2	767	655	493	298	127
62	MERCU	MONTR	4000	292	S3	2	36	31	23	14	6
62	MERCU	STAWA	0	0	0	0	323	276	208	129	53
62	OLDSM	F-85	3000	215	A	2	643	587	449	278	123
62	OLDSM	F-85	3000	215	S3	2	77	71	54	33	14
62	OLDSM	DYN88	4500	394	A	2	1435	1310	1001	621	275
62	OLDSM	DYN88	4500	394	S3	2	7	6	5	3	1
62	OLDSM	SUP88	4500	394	A	4	451	412	315	195	86
62	OLDSM	SUP88	4500	394	S3	4	2	2	1	0	0
62	OLDSM	STARF	4500	394	A	4	324	295	226	140	62
62	OLDSM	STARF	4500	394	S3	4	1	1	1	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	OLDSM	98	4500	394	A	4	541	453	377	234	104
62	OLDSM	STAWA	0	0	0	0	215	156	150	93	41
62	PLYMO	VALIA	3000	170	A	1	581	154	20	0	0
62	PLYMO	VALIA	3000	170	S3	1	370	98	13	0	0
62	PLYMO	SAVOY	3500	225	A	1	168	44	6	0	0
62	PLYMO	SAVOY	3500	225	S3	1	58	15	2	0	0
62	PLYMO	SAVOY	3500	318	A	2	230	61	8	0	0
62	PLYMO	SAVOY	3500	318	S3	2	79	21	2	0	0
62	PLYMO	BELVE	3500	225	A	1	106	28	3	0	0
62	PLYMO	BELVE	3500	225	S3	1	36	9	1	0	0
62	PLYMO	BELVE	3500	318	A	2	144	38	5	0	0
62	PLYMO	BELVE	3500	318	S3	2	49	13	1	0	0
62	PLYMO	FURY	3500	225	A	1	125	33	4	0	0
62	PLYMO	FURY	3500	225	S3	1	43	11	1	0	0
62	PLYMO	FURY	3500	318	A	2	170	45	6	0	0
62	PLYMO	FURY	3500	318	S3	2	58	15	2	0	0
62	PLYMO	STAWA	0	0	0	0	271	72	5	0	0
62	PONTI	TEMPE	3000	195	A	1	743	659	546	428	310
62	PONTI	TEMPE	3000	195	S3	1	188	166	138	108	78
62	PONTI	CATAL	4000	389	A	2	1298	1151	958	748	541
62	PONTI	CATAL	4000	389	S3	2	68	60	50	39	28
62	PONTI	STARC	4000	389	A	2	288	255	212	166	120
62	PONTI	STARC	4000	389	S3	2	15	13	11	8	6
62	PONTI	BONNE	4000	389	A	4	701	621	517	404	292
62	PONTI	BONNE	4000	389	S3	4	36	32	27	21	15
62	PONTI	GRANP	4000	389	A	4	2785	2470	2055	1606	1162
62	PONTI	GRANP	4000	389	S3	4	14	13	10	8	6
62	PONTI	STAWA	0	0	0	0	356	315	262	205	148

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	AMMOT	AMERI	3000	196	A	1	441	323	215	123	58
61	AMMOT	AMERI	3000	196	S3	1	452	331	221	126	60
61	AMMOT	CLASS	3500	196	A	1	717	525	350	200	95
61	AMMOT	CLASS	3500	196	S3	1	734	538	358	205	97
61	AMMOT	CLASS	3500	250	A	2	25	18	12	7	3
61	AMMOT	CLASS	3500	250	S3	2	26	19	12	7	3
61	AMMOT	AMBAS	3500	327	A	2	69	50	33	19	9
61	AMMOT	AMBAS	3500	327	S3	2	71	52	34	19	9
61	BUICK	SPECI	3000	215	A	2	627	582	513	435	352
61	BUICK	SPECI	3000	215	S3	2	97	90	80	67	55
61	BUICK	LESAB	4500	364	A	2	837	776	685	581	470
61	BUICK	LESAB	4500	364	S3	2	9	8	7	6	5
61	BUICK	INVIC	4500	401	A	4	248	230	203	172	139
61	BUICK	INVIC	4500	401	S3	4	2	2	2	1	1
61	BUICK	ELECT	4500	401	A	4	271	251	222	188	152
61	BUICK	ELECT	4500	401	S3	4	3	2	2	2	1
61	BUICK	STAWA	0	0	0	0	69	64	57	48	39
61	CADIL	CADIL	5000	390	A	4	1119	1048	947	828	694
61	CHEVR	CORVA	2750	145	A	2	1277	1026	777	542	342
61	CHEVR	CORVA	2750	145	S3	2	750	602	456	318	201
61	CHEVR	CHEV2	3000	153	A	1	141	114	86	60	38
61	CHEVR	CHEV2	3000	153	S3	1	83	66	50	35	22
61	CHEVR	BISCA	3500	236	A	1	483	388	294	205	129
61	CHEVR	BISCA	3500	236	S3	1	238	191	145	101	63
61	CHEVR	BISCA	3500	283	A	2	615	494	374	261	164
61	CHEVR	BISCA	3500	283	S3	2	303	243	184	128	81
61	CHEVR	BELAI	3500	236	A	1	648	521	394	275	173
61	CHEVR	BELAI	3500	236	S3	1	319	256	194	135	85
61	CHEVR	BELAI	4000	283	A	2	825	663	502	350	221
61	CHEVR	BELAI	4000	283	S3	2	406	326	247	172	108
61	CHEVR	IMPAL	3500	236	A	1	988	793	601	419	264
61	CHEVR	IMPAL	3500	236	S3	1	487	391	296	206	130
61	CHEVR	IMPAL	4000	283	A	2	1258	1010	765	533	337
61	CHEVR	IMPAL	4000	283	S3	2	619	497	377	263	166
61	CHEVR	CORVE	3000	283	A	4	44	36	27	19	12
61	CHEVR	CORVE	3000	283	S3	4	26	21	16	11	7
61	CHEVR	STAWA	0	0	0	0	1111	892	676	471	297
61	CHRYS	NEWPO	4000	361	A	2	367	325	265	205	148
61	CHRYS	300	4500	413	A	4	116	103	84	65	47
61	CHRYS	NEWYO	4500	413	A	4	150	133	108	83	60
61	CHRYS	STAWA	0	0	0	0	37	33	27	20	15
61	DODGE	LANCE	3000	170	A	1	334	267	200	139	87
61	DODGE	LANCE	3000	170	S3	1	93	74	55	38	24
61	DODGE	DART	3000	225	A	1	287	229	172	119	75
61	DODGE	DART	3000	225	S3	1	80	63	48	33	20

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	DODGE	DART	3000	318	A	2	501	401	301	208	131
61	DODGE	DART	3000	318	S3	2	139	111	84	58	36
61	DODGE	POLAR	3500	361	A	2	71	56	42	29	18
61	DODGE	POLAR	3500	361	S3	2	19	15	11	8	5
61	FORD	FALCO	2750	144	A	1	1523	1278	1019	768	542
61	FORD	FALCO	2750	144	S3	1	1862	1563	1246	938	663
61	FORD	FAIRL	3500	223	A	1	352	296	236	177	125
61	FORD	FAIRL	3500	223	S3	1	173	145	116	87	61
61	FORD	FAIRL	3500	292	A	2	733	615	490	369	261
61	FORD	FAIRL	3500	292	S3	2	361	303	241	182	128
61	FORD	GALAX	4000	223	A	1	585	491	391	294	208
61	FORD	GALAX	4000	223	S3	1	288	241	192	145	102
61	FORD	GALAX	4000	292	A	2	1215	1019	813	612	432
61	FORD	GALAX	4000	292	S3	2	598	502	400	301	213
61	FORD	TBIRD	4500	390	A	4	57	48	38	28	20
61	FORD	TBIRD	4500	390	S3	4	1	0	0	0	0
61	FORD	STAWA	0	0	0	0	921	773	616	464	328
61	IMPER	IMPER	5000	413	A	4	114	87	55	26	7
61	LINCO	LINCO	5500	430	A	4	259	260	254	248	242
61	MERCU	COMET	2750	144	A	1	845	737	616	497	362
61	MERCU	COMET	2750	144	S3	1	518	451	379	305	234
61	MERCU	METEO	4000	223	A	1	43	38	32	25	19
61	MERCU	METEO	4000	223	S3	1	26	23	19	15	12
61	MERCU	METEO	4000	292	A	2	131	114	96	77	59
61	MERCU	METEO	4000	292	S3	2	80	70	59	47	36
61	MERCU	MONTR	4000	292	A	2	292	255	213	172	132
61	MERCU	MONTR	4000	292	S3	2	179	156	131	105	81
61	MERCU	ST/WA	0	0	0	0	128	112	94	75	58
61	OLDSM	F-85	3000	215	A	2	263	188	115	53	16
61	OLDSM	F-85	3000	215	S3	2	263	188	115	53	16
61	OLDSM	88	4500	394	A	2	1354	959	610	281	86
61	OLDSM	88	4500	394	S3	2	16	12	7	3	1
61	OLDSM	98	4500	394	A	4	335	240	146	67	20
61	OLDSM	98	4500	394	S3	4	4	2	1	0	0
61	OLDSM	STARF	4500	394	A	4	60	43	26	12	3
61	OLDSM	STARF	4500	394	S3	4	0	0	0	0	0
61	OLDSM	STAWA	0	0	0	0	108	78	47	21	6
61	PLYMO	VALIA	3000	170	A	1	458	363	273	189	120
61	PLYMO	VALIA	3000	170	S3	1	365	290	218	151	96
61	PLYMO	SAVOY	3500	225	A	1	102	85	64	44	28
61	PLYMO	SAVOY	3500	225	S3	1	38	30	23	16	10
61	PLYMO	SAVOY	3500	318	A	2	162	128	96	67	42
61	PLYMO	SAVOY	3500	318	S3	2	57	46	34	24	15
61	PLYMO	BELVE	3500	225	A	1	102	81	61	42	27
61	PLYMO	BELVE	3500	225	S3	1	36	29	21	15	9

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	PLYMO	BELVE	3500	318	A	2	125	99	74	52	33
61	PLYMO	BELVE	3500	318	S3	2	44	35	26	18	11
61	PLYMO	FURY	3500	225	A	1	106	84	63	44	28
61	PLYMO	FURY	3500	225	S3	1	38	30	22	15	10
61	PLYMO	FURY	3500	318	A	2	130	103	77	54	34
61	PLYMO	FURY	3500	318	S3	2	46	37	27	19	12
61	PLYMO	STAWA	0	0	0	0	245	197	148	103	65

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	AMMOT	AMERI	3000	196	A	1	379	276	184	108	54
60	AMMOT	AMERI	3000	196	S3	1	388	283	188	110	56
60	AMMOT	CLASS	3500	196	A	1	903	659	436	257	130
60	AMMOT	CLASS	3500	196	S3	1	924	675	449	264	133
60	AMMOT	CLASS	3500	250	A	2	52	38	25	15	7
60	AMMOT	CLASS	3500	250	S3	2	53	39	26	15	7
60	AMMOT	AMBAS	3500	327	A	2	72	52	35	20	10
60	AMMOT	AMBAS	3500	327	S3	2	74	54	35	21	10
60	BUICK	SPECI	3000	215	A	2	67	54	41	28	17
60	BUICK	SPECI	3000	215	S3	2	16	13	10	7	4
60	BUICK	LESAB	4500	364	A	2	757	614	458	316	198
60	BUICK	LESAB	4500	364	S3	2	8	6	5	3	2
60	BUICK	INVIC	4500	401	A	4	216	175	131	90	56
60	BUICK	INVIC	4500	401	S3	4	2	1	1	1	0
60	BUICK	ELECT	4500	401	A	4	303	246	183	126	79
60	BUICK	ELECT	4500	401	S3	4	3	2	2	1	0
60	BUICK	STAWA	0	0	0	0	63	51	38	26	16
60	CADIL	CADIL	5000	390	A	4	1109	1079	992	894	788
60	CHEVR	CORVA	2750	140	A	1	876	701	522	361	228
60	CHEVR	CORVA	2750	140	S3	1	514	411	307	212	134
60	CHEVR	BISCA	3500	236	A	1	512	409	309	211	133
60	CHEVR	BISCA	3500	236	S3	1	252	201	150	104	65
60	CHEVR	BISCA	3500	283	A	2	651	521	388	268	170
60	CHEVR	BISCA	3500	283	S3	2	321	256	191	132	83
60	CHEVR	BELAI	3500	236	A	1	709	567	422	292	185
60	CHEVR	BELAI	3500	236	S3	1	349	279	208	143	91
60	CHEVR	BELAI	3500	283	A	2	902	721	538	372	235
60	CHEVR	BELAI	3500	283	S3	2	444	355	265	183	116
60	CHEVR	IMPAL	3500	236	A	1	982	785	585	404	256
60	CHEVR	IMPAL	3500	236	S3	1	483	386	288	199	126
60	CHEVR	IMPAL	3500	283	A	2	1250	999	745	515	326
60	CHEVR	IMPAL	3500	283	S3	2	615	492	367	253	160
60	CHEVR	CORVE	3000	283	A	4	42	34	25	17	11
60	CHEVR	CORVE	3000	283	S3	4	25	20	14	10	6
60	CHEVR	STAWA	0	0	0	0	1324	1059	789	545	345
60	CHRYS	NEWPO	4000	383	A	2	209	171	122	78	43
60	CHRYS	300	4500	413	A	4	13	11	7	5	2
60	CHRYS	NEWYO	4500	413	A	4	60	49	35	22	12
60	CHRYS	STAWA	0	0	0	0	11	9	6	4	2
60	DODGE	LANCE	3000	361	A	2	53	39	25	15	7
60	DODGE	LANCE	3000	361	S3	2	14	10	7	4	2
60	DODGE	DART	3500	225	A	1	356	260	171	101	52
60	DODGE	DART	3500	225	S3	1	99	72	47	28	14
60	DODGE	DART	3500	318	A	2	623	455	299	176	92
60	DODGE	DART	3500	318	S3	2	173	127	83	49	25

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	DODGE	POLAR	3500	383	A	4	126	92	60	35	18
60	DODGE	POLAR	3500	383	S3	4	35	25	16	9	5
60	FORD	FALCO	2750	144	A	1	1016	735	494	300	161
60	FORD	FALCO	2750	144	S3	1	1242	898	604	366	197
60	FORD	FAIRL	3500	223	A	1	461	333	224	136	73
60	FORD	FAIRL	3500	223	S3	1	227	164	110	67	36
60	FORD	FAIRL	3500	292	A	2	958	693	466	283	152
60	FORD	FAIRL	3500	292	S3	2	472	341	229	139	75
60	FORD	GALAX	4000	223	A	1	324	234	158	95	51
60	FORD	GALAX	4000	223	S3	1	159	115	77	47	25
60	FORD	GALAX	4000	292	A	2	674	487	328	199	107
60	FORD	GALAX	4000	292	S3	2	332	240	161	98	52
60	FORD	TBIRD	4000	352	A	4	400	289	194	118	63
60	FORD	TBIRD	4000	352	S3	4	6	5	3	2	1
60	FORD	STAWA	0	0	0	0	833	602	405	246	132
60	IMPER	IMPER	5000	413	A	4	107	74	44	20	6
60	LINCO	LINCO	5500	430	A	4	145	125	104	84	66
60	OLDSM	F-85	3000	215	A	2	36	27	19	12	6
60	OLDSM	F-85	3000	215	S3	2	36	27	19	12	6
60	OLDSM	88	4500	371	A	2	1119	841	586	371	210
60	OLDSM	88	4500	371	S3	2	13	10	7	4	2
60	OLDSM	98	4500	394	A	4	240	180	126	79	45
60	OLDSM	98	4500	394	S3	4	2	2	1	0	0
60	OLDSM	STAWA	0	0	0	0	82	61	43	27	15
60	PLYMO	VALIA	3000	170	A	1	487	277	123	33	4
60	PLYMO	VALIA	3000	170	S3	1	388	221	98	26	3
60	PLYMO	SAVOY	3500	225	A	1	258	147	65	17	2
60	PLYMO	SAVOY	3500	225	S3	1	92	52	23	6	0
60	PLYMO	BELVE	3500	225	A	1	211	120	53	14	1
60	PLYMO	BELVE	3500	225	S3	1	75	43	19	5	0
60	PLYMO	FURY	3500	318	A	2	197	112	50	13	1
60	PLYMO	FURY	3500	318	S3	2	70	40	17	4	0
60	PLYMO	STAWA	0	0	0	0	265	151	67	18	2
60	PONTI	TEMPE	3000	195	S3	1	58	40	24	13	5
60	PONTI	CATAL	4000	389	A	2	797	542	335	178	80
60	PONTI	CATAL	4000	389	S3	2	22	15	9	4	2
60	PONTI	VENTU	4000	389	A	2	241	164	101	54	24
60	PONTI	VENTU	4000	389	S3	2	6	4	2	1	0
60	PONTI	STARC	4000	389	A	4	199	135	83	44	20
60	PONTI	STARC	4000	389	S3	4	5	3	2	1	0
60	PONTI	BONNE	4500	389	A	4	374	254	157	84	37
60	PONTI	BONNE	4500	389	S3	4	10	7	4	2	1
60	PONTI	STAWA	0	0	0	0	170	116	71	38	17
60	MERCU	COMET	2750	144	A	1	541	420	301	193	108
60	MERCU	COMET	2750	144	S3	1	331	257	184	118	66

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	MERCU	MONTR	4500	312	A	2	665	516	370	238	133
60	MERCU	MONTR	4500	312	S3	2	57	44	32	20	11
60	MERCU	STAWA	0	0	0	0	523	717	514	330	186

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
59	AMMOT	AMERI	3000	196	A	1	330	196	104	45	15
59	AMMOT	AMERI	3000	196	S3	1	365	216	115	50	16
59	AMMOT	CLASS	3500	196	A	1	172	102	54	23	8
59	AMMOT	CLASS	3500	196	S3	1	190	113	60	26	8
59	AMMOT	CLASS	3500	250	A	2	172	102	54	23	8
59	AMMOT	CLASS	3500	250	S3	2	190	113	60	26	8
59	AMMOT	AMBAS	3500	327	A	4	330	196	104	45	15
59	AMMOT	AMBAS	3500	327	S3	4	365	216	115	50	16
59	BUICK	LESAB	4500	364	A	2	493	307	172	82	32
59	BUICK	LESAB	4500	364	S3	2	5	3	2	1	0
59	BUICK	INVIC	4500	401	A	4	246	153	86	41	16
59	BUICK	INVIC	4500	401	S3	4	2	1	1	0	0
59	BUICK	ELECT	4500	401	A	4	246	153	86	41	16
59	BUICK	ELECT	4500	401	S3	4	2	1	1	0	0
59	CADIL	CADIL	5000	390	A	4	819	670	499	342	213
59	CHRYS	WINDS	4000	383	A	2	2364	1568	1004	565	277
59	CHRYS	SARAT	4500	383	A	4	2370	1633	1033	581	285
59	CHRYS	NEWYO	4500	413	A	4	2370	1633	1033	581	285
59	DODGE	CORON	3500	230	A	1	16	10	6	3	1
59	DODGE	CORON	3500	230	S3	1	1	0	0	0	0
59	DODGE	CORON	3500	326	A	2	70	45	27	14	6
59	DODGE	CORON	3500	326	S3	2	4	2	1	0	0
59	DODGE	ROYAL	4000	361	A	4	157	101	61	31	13
59	DODGE	ROYAL	4000	361	S3	4	10	6	3	2	0
59	FORD	FAIRL	3500	223	A	1	105	72	46	26	13
59	FORD	FAIRL	3500	223	S3	1	45	31	20	11	5
59	FORD	FAIRL	3500	292	A	2	353	244	156	90	46
59	FORD	FAIRL	3500	292	S3	2	151	104	66	38	19
59	FORD	TBIRD	4000	352	A	4	44	30	19	11	5
59	FORD	TBIRD	4000	352	S3	4	0	0	0	0	0
59	IMPER	IMPER	5000	413	A	4	5363	3427	2001	1022	447
59	LINCO	LINCO	5000	430	A	4	73	49	29	15	6
59	MERCU	MONTR	4000	312	A	2	42	14	4	0	0
59	MERCU	MONTR	4000	312	S3	2	1	0	0	0	0
59	MERCU	MONTC	4500	383	A	4	42	14	4	0	0
59	MERCU	MONTC	4500	383	S3	4	1	0	0	0	0
59	OLDSM	88	4500	371	A	2	320	44	5	0	0
59	OLDSM	88	4500	371	S3	2	2	0	0	0	0
59	OLDSM	98	4500	394	A	4	320	44	5	0	0
59	OLDSM	98	4500	394	S3	4	2	0	0	0	0
59	PLYMO	SAVOY	3500	230	A	1	102	59	30	11	3
59	PLYMO	SAVOY	3500	230	S3	1	37	22	11	4	1
59	PLYMO	SAVOY	3500	318	A	2	232	135	68	27	8
59	PLYMO	SAVOY	3500	318	S3	2	85	49	25	9	2
59	PLYMO	BELVE	3500	230	A	1	102	59	30	11	3

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
59	PLYMO	BELVE	3500	230	S3	1	37	22	11	4	1
59	PLYMO	BELVE	3500	318	A	2	232	135	68	27	8
59	PLYMO	BELVE	3500	318	S3	2	85	49	25	9	2
59	PLYMO	FURY	3500	230	A	1	102	59	30	11	3
59	PLYMO	FURY	3500	230	S3	1	37	22	11	4	1
59	PLYMO	FURY	3500	318	A	2	232	135	68	27	8
59	PLYMO	FURY	3500	318	S3	2	85	49	25	9	2
59	PONTI	CATAL	4000	389	A	2	328	197	106	50	20
59	PONTI	CATAL	4000	389	S3	2	9	5	3	1	0
59	PONTI	STARC	4000	389	A	2	328	197	106	50	20
59	PONTI	STARC	4000	389	S3	2	9	5	3	1	0
59	PONTI	BONNE	4500	389	A	2	328	197	106	50	20
59	PONTI	BONNE	4500	389	S3	2	9	5	3	1	0
59	CHEVR	DELRA	3500	236	A	1	475	306	177	88	36
59	CHEVR	DELRA	3500	236	S3	1	248	160	92	46	19
59	CHEVR	DELRA	3500	283	A	2	247	159	92	45	19
59	CHEVR	DELRA	3500	283	S3	2	129	83	48	23	9
59	CHEVR	BISCA	3500	236	A	1	190	122	71	35	14
59	CHEVR	BISCA	3500	236	S3	1	99	64	37	18	7
59	CHEVR	BISCA	3500	283	A	2	265	183	106	52	21
59	CHEVR	BISCA	3500	283	S3	2	148	95	55	27	11
59	CHEVR	BELAI	3500	236	A	1	304	196	113	56	23
59	CHEVR	BELAI	3500	236	S3	1	158	102	59	29	12
59	CHEVR	BELAI	3500	283	A	2	380	245	141	70	29
59	CHEVR	BELAI	3500	283	S3	2	198	128	74	36	15
59	CHEVR	CORVE	3000	283	A	2	18	11	6	3	1
59	CHEVR	CORVE	3000	283	S3	2	9	6	3	1	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	AMMOT	AMERI	3000	196	A	1	80	47	26	13	5
58	AMMOT	AMERI	3000	196	S3	1	89	52	29	14	6
58	AMMOT	CLASS	3500	196	A	1	20	11	6	3	1
58	AMMOT	CLASS	3500	196	S3	1	22	13	7	3	1
58	AMMOT	CLASS	3500	250	A	2	12	7	4	2	0
58	AMMOT	CLASS	3500	250	S3	2	13	8	4	2	0
58	AMMOT	AMBAS	3500	327	A	4	15	9	5	2	1
58	AMMOT	AMBAS	3500	327	S3	4	17	10	5	2	1
58	BUICK	SPECI	4000	364	A	2	30	0	0	0	0
58	BUICK	SPECI	4000	364	S3	2	0	0	0	0	0
58	BUICK	CENTU	4500	364	A	2	329	7	0	0	0
58	BUICK	CENTU	4500	364	S3	2	4	0	0	0	0
58	BUICK	SUPER	4500	364	A	4	91	2	0	0	0
58	BUICK	SUPER	4500	364	S3	4	1	0	0	0	0
58	BUICK	ROADM	5000	364	A	4	134	3	0	0	0
58	BUICK	ROADM	5000	364	S3	4	1	0	0	0	0
58	BUICK	LIMIT	5000	364	A	4	24	0	0	0	0
58	BUICK	LIMIT	5000	364	S3	4	0	0	0	0	0
58	CADIL	CADIL	5000	365	A	4	530	352	213	110	46
58	CHEVR	DELRA	3500	236	A	1	1681	1060	630	334	154
58	CHEVR	DELRA	3500	236	S3	1	877	553	329	174	80
58	CHEVR	DELRA	3500	283	A	2	874	551	328	173	80
58	CHEVR	DELRA	3500	283	S3	2	456	288	171	90	42
58	CHEVR	BISCA	3500	236	A	1	672	423	252	133	61
58	CHEVR	BISCA	3500	236	S3	1	350	221	131	69	32
58	CHEVR	BISCA	3500	283	A	2	1009	636	378	200	93
58	CHEVR	BISCA	3500	283	S3	2	526	332	197	104	48
58	CHEVR	BELAI	3500	236	A	1	821	518	308	163	75
58	CHEVR	BELAI	3500	236	S3	1	428	270	160	85	39
58	CHEVR	BELAI	3500	283	A	2	1346	849	505	267	124
58	CHEVR	BELAI	3500	283	S3	2	703	443	263	139	64
58	CHEVR	CORVE	3000	283	A	2	68	43	25	13	6
58	CHEVR	CORVE	3000	283	S3	2	35	22	13	7	3
58	DODGE	CORON	3500	230	A	1	10	5	3	1	0
58	DODGE	CORON	3500	230	S3	1	0	0	0	0	0
58	DODGE	CORON	3500	325	A	2	13	7	4	1	0
58	DODGE	CORON	3500	325	S3	2	0	0	0	0	0
58	DODGE	ROYAL	4000	325	A	2	124	68	35	15	5
58	DODGE	ROYAL	4000	325	S3	2	7	4	2	1	0
58	DODGE	CUSTO	4000	350	A	4	55	30	15	7	2
58	DODGE	CUSTO	4000	350	A	4	3	1	1	0	0
58	FORD	CUSTO	3500	223	A	1	141	1	0	0	0
58	FORD	CUSTO	3500	223	S3	1	60	0	0	0	0
58	FORD	CUSTO	3500	292	A	2	25	0	0	0	0
58	FORD	CUSTO	3500	292	S3	2	11	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	FORD	FAIRL	3500	223	A	1	146	1	0	0	0
58	FORD	FAIRL	3500	223	S3	1	63	0	0	0	0
58	FORD	FAIRL	3500	292	A	2	77	0	0	0	0
58	FORD	FAIRL	3500	292	S3	2	33	0	0	0	0
58	FORD	FA500	3500	223	A	1	90	1	0	0	0
58	FORD	FA500	3500	223	S3	1	38	0	0	0	0
58	FORD	FA500	3500	332	A	4	122	1	0	0	0
58	FORD	FA500	3500	332	S3	4	52	0	0	0	0
58	FORD	TBIRD	4000	352	A	4	54	0	0	0	0
58	FORD	TBIRD	4000	352	S3	4	1	0	0	0	0
58	IMPER	IMPER	5000	430	A	4	2047	349	63	5	0
58	LINCO	LINCO	5000	430	A	4	55	23	8	2	0
58	MERCU	MONTR	4500	383	A	4	18	4	1	0	0
58	MERCU	MONTR	4500	383	S3	4	0	0	0	0	0
58	MERCU	MONTC	4500	383	A	4	3	0	0	0	0
58	MERCU	MONTC	4500	383	S3	4	0	0	0	0	0
58	MERCU	PARKL	4500	430	A	4	29	7	1	0	0
58	MERCU	PARKL	4500	430	S3	4	0	0	0	0	0
58	OLDSM	88	4500	371	A	2	32	15	7	3	1
58	OLDSM	88	4500	371	S3	2	0	0	0	0	0
58	OLDSM	SUP88	4500	371	A	4	229	104	53	23	9
58	OLDSM	SUP88	4500	371	S3	4	2	0	0	0	0
58	OLDSM	98	4500	371	A	4	65	30	15	6	2
58	OLDSM	98	4500	371	S3	4	0	0	0	0	0
58	PLYMO	PLAZA	3500	230	A	1	237	8	0	0	0
58	PLYMO	PLAZA	3500	230	S3	1	87	3	0	0	0
58	PLYMO	PLAZA	3500	318	A	2	28	1	0	0	0
58	PLYMO	PLAZA	3500	318	S3	2	10	0	0	0	0
58	PLYMO	SAVOY	3500	230	A	1	38	1	0	0	0
58	PLYMO	SAVOY	3500	230	S3	1	14	0	0	0	0
58	PLYMO	SAVOY	3500	318	A	2	38	1	0	0	0
58	PLYMO	SAVOY	3500	318	S3	2	14	0	0	0	0
58	PLYMO	BELVE	3500	230	A	1	48	1	0	0	0
58	PLYMO	BELVE	3500	230	S3	1	17	0	0	0	0
58	PLYMO	BELVE	3500	318	A	2	24	0	0	0	0
58	PLYMO	BELVE	3500	318	S3	2	8	0	0	0	0
58	PLYMO	FURY	4000	318	A	2	68	2	0	0	0
58	PLYMO	FURY	4000	318	S3	2	25	0	0	0	0
58	PONTI	CHIEF	4000	370	A	2	293	0	0	0	0
58	PONTI	CHIEF	4000	370	S3	2	8	0	0	0	0
58	PONTI	SUPCH	4000	370	A	2	93	0	0	0	0
58	PONTI	SUPCH	4000	370	S3	2	2	0	0	0	0
58	PONTI	STARC	4000	370	A	4	81	0	0	0	0
58	PONTI	STARC	4000	370	S3	4	2	0	0	0	0
58	PONTI	BONNE	4000	370	A	4	144	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	PONTI	BONNE	4000	370	S3	4	4	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
57	AMMOT	HORNE	4000	327	A	2	47	23	11	4	1
57	AMMOT	HORNE	4000	327	S3	2	52	26	12	5	1
57	AMMOT	METRO	2250	91	S3	1	56	48	23	9	3
57	AMMOT	RAMEL	3000	196	S3	1	26	13	6	2	0
57	AMMOT	NASH	4000	196	S3	1	38	19	9	3	1
57	BUICK	SPECI	4500	364	A	2	100	3	0	0	0
57	BUICK	SPECI	4500	364	S3	2	1	0	0	0	0
57	BUICK	CENTU	4500	364	A	4	315	10	0	0	0
57	BUICK	CENTU	4500	364	S3	4	3	0	0	0	0
57	BUICK	SUPER	4500	364	A	4	112	3	0	0	0
57	BUICK	SUPER	4500	364	S3	4	1	0	0	0	0
57	BUICK	ROADM	4500	364	A	4	130	4	0	0	0
57	BUICK	ROADM	4500	364	S3	4	1	0	0	0	0
57	CADIL	CADIL	5000	365	A	4	474	299	181	97	46
57	CHEVR	150	3500	236	A	1	1640	504	144	21	1
57	CHEVR	150	3500	236	S3	1	856	263	75	11	0
57	CHEVR	150	3500	265	A	2	1640	504	144	21	1
57	CHEVR	150	3500	265	S3	2	856	263	75	11	0
57	CHEVR	150	3500	283	A	2	2301	708	202	30	1
57	CHEVR	150	3500	283	S3	2	1201	369	105	15	0
57	CHEVR	210	3500	236	A	1	1640	504	144	21	1
57	CHEVR	210	3500	236	S3	1	856	263	75	11	0
57	CHEVR	210	3500	265	A	2	1316	404	115	17	1
57	CHEVR	210	3500	265	S3	2	687	211	60	9	0
57	CHEVR	210	3500	283	A	2	2132	656	187	28	1
57	CHEVR	210	3500	283	S3	2	1113	342	97	14	0
57	CHEVR	BELAI	3500	236	A	1	1147	352	100	15	0
57	CHEVR	BELAI	3500	236	S3	1	599	184	52	7	0
57	CHEVR	BELAI	3500	265	A	2	2132	656	187	28	1
57	CHEVR	BELAI	3500	265	S3	2	1113	342	97	14	0
57	CHEVR	BELAI	3500	283	A	2	2463	757	216	32	1
57	CHEVR	BELAI	3500	283	S3	2	1286	395	113	16	1
57	CHEVR	CORVE	3000	283	A	2	161	49	14	2	0
57	CHEVR	CORVE	3000	283	S3	2	84	26	7	1	0
57	CHRYS	WINDS	4500	354	A	4	31	0	0	0	0
57	CHRYS	SARAT	4500	354	A	4	15	0	0	0	0
57	CHRYS	NEWYO	4500	392	A	4	80	0	0	0	0
57	CHRYS	300	4500	392	A	4	186	1	0	0	0
57	DODGE	CORON	3500	230	A	1	282	2	0	0	0
57	DODGE	CORON	3500	230	S3	1	18	0	0	0	0
57	DODGE	CORON	3500	325	A	2	188	1	0	0	0
57	DODGE	CORON	3500	325	S3	2	12	0	0	0	0
57	DODGE	ROYAL	4000	325	A	2	62	0	0	0	0
57	DODGE	ROYAL	4000	325	S3	2	4	0	0	0	0
57	DODGE	CUSTO	4000	325	A	4	54	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
57	DODGE	CUSTO	4000	325	S3	4	6	0	0	0	0
57	FORD	CUSTO	3500	223	A	1	2498	899	348	105	24
57	FORD	CUSTO	3500	223	S3	1	1070	385	149	45	10
57	FORD	CUSTO	3000	272	A	2	297	107	41	12	2
57	FORD	CUSTO	3000	272	S3	2	127	45	17	5	1
57	FORD	FAIRL	3500	223	A	1	2081	749	290	88	20
57	FORD	FAIRL	3500	223	S3	1	892	321	124	37	8
57	FORD	FAIRL	3500	272	A	2	1069	384	148	45	10
57	FORD	FAIRL	3500	272	S3	2	458	164	63	19	4
57	IMPER	IMPER	5000	392	A	4	0	0	0	0	0
57	LINCO	LINCO	5000	368	A	4	84	16	3	0	0
57	MERCU	MONTR	4000	312	A	2	141	53	21	7	2
57	MERCU	MONTR	4000	312	S3	2	3	1	0	0	0
57	MERCU	MONTC	4000	312	A	4	141	53	21	7	2
57	MERCU	MONTC	4000	312	S3	4	3	1	0	0	0
57	MERCU	TURNP	4500	368	A	4	31	12	4	1	0
57	MERCU	TURNP	4500	368	S3	4	0	0	0	0	0
57	OLDSM	88	4500	371	A	4	282	55	12	1	0
57	OLDSM	88	4500	371	S3	4	2	0	0	0	0
57	OLDSM	SUP88	4500	371	A	4	146	26	6	1	0
57	OLDSM	SUP88	4500	371	S3	4	1	0	0	0	0
57	OLDSM	98	4500	371	A	4	108	21	4	0	0
57	OLDSM	98	4500	371	S3	4	0	0	0	0	0
57	PLYMO	PLAZA	3500	230	A	1	247	1	0	0	0
57	PLYMO	PLAZA	3500	230	S3	1	91	0	0	0	0
57	PLYMO	PLAZA	3500	277	A	2	31	0	0	0	0
57	PLYMO	PLAZA	3500	277	S3	2	11	0	0	0	0
57	PLYMO	SAVOY	3500	230	A	1	111	0	0	0	0
57	PLYMO	SAVOY	3500	230	S3	1	40	0	0	0	0
57	PLYMO	SAVOY	3500	301	A	2	43	0	0	0	0
57	PLYMO	SAVOY	3500	301	S3	2	15	0	0	0	0
57	PLYMO	BELVE	3500	230	A	1	37	0	0	0	0
57	PLYMO	BELVE	3500	230	S3	1	13	0	0	0	0
57	PLYMO	BELVE	3500	301	A	2	62	0	0	0	0
57	PLYMO	BELVE	3500	301	S3	2	22	0	0	0	0
57	PLYMO	FURY	4000	318	A	4	88	0	0	0	0
57	PLYMO	FURY	4000	318	S3	4	31	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID			
								72	73	74	75
56	FORD	CUSTO	3500	272	S3	2	55	25	12	5	2
56	FORD	FAIRL	3500	233	A	1	365	165	81	35	13
56	FORD	FAIRL	3500	233	S3	1	156	70	35	15	5
56	FORD	FAIRL	3500	292	A	2	365	165	81	35	13
56	FORD	FAIRL	3500	292	S3	2	156	70	35	15	5
56	FORD	TBIRD	3500	292	A	2	214	97	48	20	7
56	FORD	TBIRD	3500	292	S3	2	92	41	20	8	3
56	LINCO	LINCO	4500	368	A	4	0	0	0	0	0
56	MERCU	MONTR	4000	312	A	2	52	9	2	0	0
56	MERCU	MONTR	4000	312	S3	2	1	0	0	0	0
56	MERCU	MONTC	4000	312	A	2	41	7	1	0	0
56	MERCU	MONTC	4000	312	S3	2	1	0	0	0	0
56	OLDSM	88	4000	324	A	2	35	15	7	3	1
56	OLDSM	88	4000	324	S3	2	0	0	0	0	0
56	OLDSM	SUP88	4000	324	A	4	285	126	62	27	10
56	OLDSM	SUP88	4000	324	S3	4	2	1	0	0	0
56	OLDSM	98	4500	324	A	4	35	15	7	3	1
56	OLDSM	98	4500	324	S3	4	0	0	0	0	0
56	PLYMO	PLAZA	3500	230	A	1	246	58	17	3	0
56	PLYMO	PLAZA	3500	230	S3	1	90	21	6	1	0
56	PLYMO	PLAZA	3500	270	A	2	55	13	3	0	0
56	PLYMO	PLAZA	3500	270	S3	2	20	4	1	0	0
56	PLYMO	SAVOY	3500	230	A	1	61	14	4	0	0
56	PLYMO	SAVOY	3500	230	S3	1	22	5	1	0	0
56	PLYMO	SAVOY	3500	270	A	2	44	10	3	0	0
56	PLYMO	SAVOY	3500	270	S3	2	16	3	1	0	0
56	PLYMO	BELVE	3500	230	A	1	66	15	4	1	0
56	PLYMO	BELVE	3500	230	S3	1	24	5	1	0	0
56	PLYMO	FURY	4000	303	A	2	84	20	5	1	0
56	PLYMO	FURY	4000	303	S3	2	30	7	2	0	0
56	PONTI	CHIEF	4000	317	A	2	433	13	0	0	0
56	PONTI	CHIEF	4000	317	S3	2	12	0	0	0	0
56	PONTI	STARC	4000	317	A	2	144	4	0	0	0
56	PONTI	STARC	4000	317	S3	2	4	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG.	TRANS	CARB	REGISTERED	PROJECTED-MID			
				DISP	TYPE	TYPE	JULY 1971	72	73	74	75
55	AMMOT	WASP	3500	202	S3	1	0	1	0	0	0
55	AMMOT	HORNE	4000	320	S3	2	0	1	0	0	0
55	BUICK	SPECI	4000	264	A	2	0	0	0	0	0
55	BUICK	SPECI	4000	264	S3	2	0	0	0	0	0
55	BUICK	SUPER	4000	322	A	2	0	4	0	0	0
55	BUICK	CENTU	4000	322	A	4	0	1	0	0	0
55	BUICK	ROADM	4500	322	A	4	0	1	0	0	0
55	CADIL	CADIL	4500	331	A	4	0	1	0	0	0
55	CHEVR	150	3500	236	A	1	0	317	165	74	27
55	CHEVR	150	3500	236	S3	1	0	293	152	68	25
55	CHEVR	150	3500	265	A	2	0	223	116	52	19
55	CHEVR	150	3500	265	S3	2	0	182	95	42	16
55	CHEVR	210	3500	236	A	1	0	281	155	69	23
55	CHEVR	210	3500	236	S3	1	0	352	183	82	31
55	CHEVR	210	3500	265	A	2	0	290	151	68	25
55	CHEVR	210	3500	265	S3	2	0	237	124	55	20
55	CHEVR	BELAI	3500	236	A	1	0	296	154	69	26
55	CHEVR	BELAI	3500	236	S3	1	0	273	142	64	24
55	CHEVR	BELAI	3500	265	A	2	0	448	234	104	39
55	CHEVR	BELAI	3500	265	S3	2	0	366	191	85	32
55	CHEVR	CORVE	3000	265	A	2	0	122	63	28	10
55	CHEVR	CORVE	3000	265	S3	2	0	285	148	66	25
55	CHRYS	WINDS	4000	301	A	2	0	0	0	0	0
55	CHRYS	IMPER	4500	331	A	4	0	0	0	0	0
55	DODGE	CORON	3500	270	A	2	0	0	0	0	0
55	DODGE	ROYAL	3500	270	A	2	0	0	0	0	0
55	DODGE	ROYAL	3500	270	S3	2	0	0	0	0	0
55	DODGE	CUSTO	3500	270	A	2	0	0	0	0	0
55	DODGE	CUSTO	3500	270	S3	2	0	0	0	0	0
55	DODGE	CUSTO	3500	230	A	1	0	0	0	0	0
55	DODGE	CUSTO	3500	230	S3	1	0	0	0	0	0
55	FORD	MAINL	3500	223	A	1	0	69	34	14	5
55	FORD	MAINL	3500	223	S3	1	0	276	136	59	23
55	FORD	MAINL	3500	272	A	2	0	28	13	6	2
55	FORD	MAINL	3500	272	S3	2	0	28	13	6	2
55	FORD	CUSTO	3500	223	A	1	0	72	35	15	6
55	FORD	CUSTO	3500	223	S3	1	0	72	35	15	6
55	FORD	CUSTO	3500	272	A	2	0	151	74	32	12
55	FORD	CUSTO	3500	272	S3	2	0	37	18	8	3
55	FORD	FAIRL	3500	223	A	1	0	107	52	23	8
55	FORD	FAIRL	3500	223	S3	1	0	71	35	15	5
55	FORD	FAIRL	3500	272	A	2	0	107	52	23	8
55	FORD	FAIRL	3500	272	S3	2	0	26	13	5	2
55	FORD	TBIRD	3500	292	A	4	0	53	26	11	4
55	FORD	TBIRD	3500	292	S3	4	0	13	6	2	1

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
55	LINCO	LINCO	4500	341	A	4	0	0	0	0	0
55	MERCU	MONTR	4000	292	A	2	0	0	0	0	0
55	MERCU	MONTR	4000	292	S3	2	0	0	0	0	0
55	MERCU	MONTC	4000	292	A	2	0	0	0	0	0
55	MERCU	MONTC	4000	292	S3	2	0	0	0	0	0
55	OLDSM	88	4000	324	A	2	0	11	5	2	1
55	OLDSM	88	4000	324	S3	2	0	0	0	0	0
55	OLDSM	SUP88	4000	324	A	4	0	90	44	20	8
55	OLDSM	98	4000	324	A	4	0	11	5	2	1
55	PLYMO	PLAZA	3500	230	A	1	0	20	6	1	0
55	PLYMO	PLAZA	3500	230	S3	1	0	82	24	5	0
55	PLYMO	PLAZA	3500	260	A	2	0	6	2	0	0
55	PLYMO	PLAZA	3500	260	S3	2	0	16	4	1	0
55	PLYMO	SAVOY	3500	230	A	1	0	10	3	0	0
55	PLYMO	SAVOY	3500	230	S3	1	0	10	3	0	0
55	PLYMO	SAVOY	3500	260	A	2	0	34	10	2	0
55	PLYMO	SAVOY	3500	260	S3	2	0	14	4	0	0
55	PLYMO	BELVE	3500	230	A	1	0	21	6	1	0
55	PLYMO	BELVE	3500	230	S3	1	0	9	2	0	0
55	PLYMO	BELVE	3500	260	A	2	0	24	7	1	0
55	PLYMO	BELVE	3500	260	S3	2	0	6	1	0	0
55	PONTI	CHIEF	4000	287	A	2	0	0	0	0	0
55	PONTI	CHIEF	4000	287	S3	2	0	0	0	0	0
55	PONTI	STARC	4000	287	A	2	0	0	0	0	0
55	PONTI	STARC	4000	287	S3	2	0	0	0	0	0